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USAF BIOENVIRONMENTAL NOISE DATA HANDBOOK

W Volume 74

T-38A Aircraft, Near and Far-Field Noise

DDC JAN 26 1978

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AEROSPACE MEDICAL RESEARCH LABORATORY AEROSPACE MEDICAL DIVISION AIR FORCE SYSTEMS COMMAND WRIGHT-PATTERSON AIR FORCE BASE, OHIO 45433

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FOR THE COMMANDER

HENNING E. VON GIERKE

Director

Biodynamics and Bionics Division Aerospace Medical Research Laboratory

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PREFACE

This report was prepared by the Biodynamic Environment Branch, Aerospace Medical Research Laboratory, under Project/Task 723104, Measurement and Prediction of Noise Environments of Air Force Operations.

The author gratefully acknowledges Mr. John Cole for his assistance in preparing this report, Mr. Robert England for his assistance in acquiring the raw data, Mr. Keith Kettler, Mr. Henry Mohlman and Mr. David Eilerman of the University of Dayton for assistance in the mechancis of data processing and Mrs. Norma Peachey and Mr. Mike Patterson for assistance in typing and preparation of the graphics.

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INTRODUCTION

The USAF T-38A is a supersonic trainer-type aircraft powered by two J85-GE-5A turbojet engines. The aircraft was manufactured by the Northrup Corporation and the engines by the General Electric Company.

This volume provides measured and extrapolated data defining bioacoustic environments produced by this aircraft during ground runup operations. Such data are essential to evaluate ear protection requirements, limiting personnel exposure times, voice communication capabilities, and annoyance problems associated with ground runups of the T-38A aircraft.

This volume is one of a series published by the Aerospace Medical Research Laboratory (AMRL) under the same report number (AMRL-TR-75-50) as a multi-volume handbook that quantifies the noise environments produced at flight/ground crew locations and in surrounding communities by operations of Air Force aircraft and ground support equipment. The far-field, community-type noise data in the handbook describe the noise produced during ground operations of aircraft, ground support equipment, and other ground-based equipment or facilities.

Volume 1 of this handbook discusses the objectives and design of the handbook, types of data presented, measurement procedures, instrumentation, data processing, definitions of quantities, symbols, equations, applications, limitations, etc. Volume 2 provides a method and data for adjusting the handbook's far-field noise data, which are for standard meteorological conditions (15 C temperature, 70% rel humidity, 0.760 meters Hg barometric pressure), to derive comparable data for other meteorological conditions. Refer to Volumes 1 and 2 (references 1 and 2) for such information because it is not repeated in other handbook volumes.

A cumulative index lists those aerospace systems contained in the handbook, and identifies the specific volumes containing each type of environmental noise data available (i.e., inflight/flight crew and passenger noise, near-field/ground crew noise, far-field/community noise). Volume numbers are assigned sequentially as individual volumes are published. This index is periodically updated as individually volumes are published and is available upon request from AMRL/BBE, Wright-Paterson AFB, OH 45433. Organizations on the distribution list for the handbook will automatically receive a copy of each updated index.

Direct any questions concerning the technical data in this report and other handbook volumes to: AMRL/BBE, Wright-Patterson AFB, OH 45433; AUTOVON 78-53675 or 78-53664; Commercial (513) 255-3675 or (513) 255-3664.

Cole, John N., USAF Bioenvironmental Noise Data Handbook, Volume 1: Organization, Content and Application, AMRL-TR-75-50 (1), Aerospace Medical Research Laboratory, Wright-Patterson Air Force Base, Ohio, 1975

Cole, John N., USAF Bioenvironmental Noise Data Handbook, Volume 2: Procedure to Evaluate Effects of Non-standard Meteorological Conditions on Far-Field Noise, AMRL-TR-75-50 (2), AMRL, WPAFB, OH, 1975

NEAR-FIELD NOISE

MEASUREMENTS

AMRL acquired near-field noise data on the T-38A aircraft during ground runup operations of its turbojet engines and ground support equipment. For these tests, the aircraft was located on a concrete runup pad at Eglin AFB with no significant reflecting surfaces in the vicinity except the ground plane. Table 1 gives the surface meteorological conditions and the seven engine, ground support equipment, and power conditions. The ground-crew chief selected power conditions and near-field locations generally used during routine maintenance or engine runup for preflight checks.

At each near-field location a test engineer randomly moved a hand held microphone in and around each location, probing all areas where a crew member's head would normally be located. He recorded all of the noise samples on magnetic tape. During analysis of each sample, he determined the root-mean square sound pressure using a 4- or 8-second integration time to derive a power-averaged level for each location. Figure 1 shows the six near-field locations where ground crew are usually located for maintenance and/or preflight checkout operations. Estimates of noise levels at other locations in the near-field are difficult since the noise source is spatially distributed, i.e., not a point source. The noise levels at near-field locations can vary widely depending upon relative distances from each noise source (intake noise, exhaust noise, panel resonances, internal engine noise through the engine wall, etc.).

Table 1 lists the numeric/alphabetic designators used on the data pages in this report to identify the measurement locations and test conditions. For example, the designator 1/A means ground crew location 1 and test condition A.

RESULTS

The measured data presented in Table 2 define the sound pressure levels (SPL) produced by the T-38A aircraft at the six ground crew locations. This table includes the overall, 1/3 octave band, and octave band levels. From these data one can calculate the variety of measures given in Table 3 which are widely used to assess the effects of noise on personnel and their performance.

All near-field data are for the meteorological conditions at the time of test but are valid for all typical airbase meteorology because of the short sound propagation distances involved.

TABLE 1

MEASUREMENT LOCATIONS AND TEST CONDITIONS FOR NEAR-FIELD NOISE MEASUREMENTS

T-38A Aircraft, Ground Runup, Eglin AFB, 19 July 1971 Tail # 701571

Ground Crew Location Operator MA-1A (Power Unit) 2 Crew Chief Observer 3 Marshal Trim Personnel 5 Trim Adjustment Wheel Chock Pull Aircraft Engine and Support Equipment Operation A MA-1A Operating (loaded) B Engine #1 Idle Power, MA-1A Operating (unloaded) C Both Engines Idle Power, MA-1A Operating (unloaded) D Both Engines Idle Power E Engine #1 Military Power Engine #2 Idle Power Engine #2 Military Power Engine #1 Idle Power G Engine #2 Afterburner Power Engine #1 Idle Power Meteorology Temperature 30.6 C Bar Pressure 0.759 M Hg Rel Humidity 68 % Wind - Speed 2.1 M/Sec (4 kt) - Direction 240 °

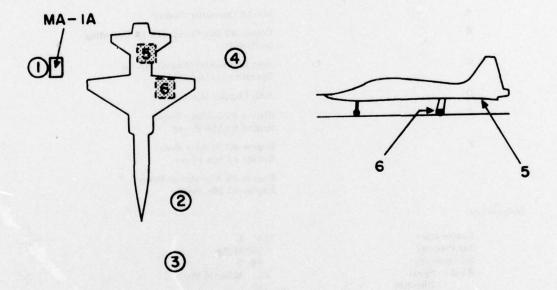


Figure 1. Near-Field Microphone Locations at Eglin AFB FL

FAR-FIELD NOISE

MEASUREMENTS

AMRL acquired far-field data during 1-hour test periods at both Edwards and Eglin AFB bases. Figure 2 shows the ground runup pads, ground cover, aircraft orientation and the 19 microphone measurement sites on each semicircle. The centers of the 75 meter radius semicircles used in surveying the J85-GE-5A engines were on the ground directly below the intersection of the aircraft's centerline and the plane passing through both engines' exhaust-nozzle exits. The ground runup pads did not have blast deflectors; therefore, the jet exhausts were in a "free-flow" condition.

Table 4 provides cockpit readouts of some engine characteristics (% RPM, fuel flow, etc.) for each power setting used in the far-field tests. Also listed in this table are the surface meteorological conditions during data acquisition.

All microphone measurement sites are in the acoustic far-field of the source where the sound wave-fronts spherically diverge and the noise source may be regarded as a point source.

Test personnel acquired far-field noise data at Eglin AFB by using a hand-held microphone (1.7 meters/5-1/2 feet above the ground plane and pointed at the noise source, 0°incidence) and sequentially recording 5 to 10 seconds of data at each far-field location on a portable microphone/tape recorder system.

A similar microphone/tape-recorder system was used to sequentially record the noise at each far-field location at Edwards AFB. However, at Edward's the microphone was attached to a hand-held pole, pointed at the source (0° angle of incidence) and vertically scanned from 0.5 to 3 meters for a period of 5-10 seconds during data acquisition at each microphone location. Both Eglin and Edward's samples were then time-integrated to derive a root-mean-square sound pressure level. Vertical scanning and time-integrating together reduce anomalies frequently present in data acquired by a fixed height microphone and now constitute the standard far-field data acquisition/reduction technique used by the AMRL.

RESULTS

Table 5 lists the overall and 1/3 octave band SPL measured at the far-field locations under meteorological conditions at the time of the test. Data in all other figures and tables are based on these levels. These data were normalized to 100 meters distance and standard meteorological conditions (15 C temperature, 70% relative humidity, 0.760 meter Hg barometric pressure) and used to derive the graphic data in Figure 3 which provides a compact summary of the far-field noise characteristics of the T-38A aircraft in a standard format.

Figure 4 and Table 6 present two basic acoustic measures, the acoustic power level and the directivity index, respectively. The acoustic power level describes the power radiated by the source as a function of frequency. The directivity index is a standard acoustical engineering measure that describes the geometric way in which the source radiates this power as a function of both frequency and angle from source. These basic source measures are primarily of interest for acoustical engineers and noise generation /control specialists.

Estimates of noise levels for intermediate power conditions (e.g., 88% engine RPM) and/or different number of engines operating (e.g., single engine) can be determined as explained in Volume 1 of this handbook.

Figures 5 through 11 are sets of equal noise contours describing seven different measures of noise as a function of angle and distance from the source for standard day meteorology. They are respectively, overall sound pressure level, C-weighted sound level, A-weighted sound level, perceived noise level, speech interference level, permissible exposure times for personnel and octave band sound pressure levels.

Data excessively influenced by spurious background/electronic noise were eliminated from all figures and tables. No data are presented at the 170 and/or 180 degree locations for two engine operation at power settings above 70% because of turbulent air flow behind the aircraft. Typically, the A-weighted levels for these angles are 10 to 20 dBA below those at the 160 degree microphone location.

Test personnel performed noise surveys during quiet periods when the background noise was minimal, e.g., early in the morning when no other aircraft or engine test stands were operating. Data eliminated because they were near the background/electronic noise were generally not significant because the levels were so low (e.g., Table 5 and Figure 11 at idle power).

Volume 2 of the handbook describes the influence of meteorology on far-field noise environments, and provides, if required, the factors necessary to adjust the handbook's standard meteorological day data.

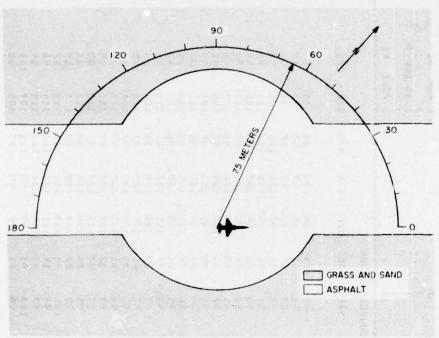


Figure 2 (a). Far-Field Microphone Locations at the Hot Cargo Pad, Eglin AFB FL

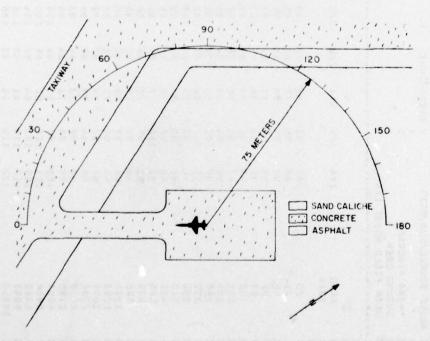


Figure 2(b). Far-Field Microphone Locations at Pad 17, Edwards AFB CA

2 1/3 OCTAV	AVE BAND											OME	3.2
NOISE SOURCE/SUBJE	BJECT	Ü.	OPERATION	IONI			-					S CN	
T-184 ATPCRAFT												10	DEC 74
GROUND CREW												;	
NEAR FIELD NOISE	SE LEVELS	-					-) PAGE	E F1
						OCATIC	LOCATION/CONDITION	ITION					
FREG	1/4	1/8	2/4	2/8	2/5	3/0	3/E	4/0	4/5	9/4	2/0	5/E	0/9
(2H2)													
25	9.8	83	61	75	79	72	82	74	85	95	68	88	81
31.5	88	98	11	80	85	75	82	80	98	46	95	93	98
04	06	68	28	88	95	82	87	85	91	66	16	46	92
20	88	93	88	91	96	81	90	91	93	100	101	66	86
63	06	46	98	68	93	80	89	90	93	101	100	101	96
90	93	96	7.8	85	68	62	68	98	16	102	46	100	*6
100	87	06	96	96	26	82	96	88	46	104	95	102	86
125	95	76	93	16	6	84	96	89	66	106	96	103	96
160	96	103	93	96	96	85	16	76	100	108	26	105	102
200	66	102	84	88	87	80	16	68	96	108	26	107	63
550	16	86	84	68	88	11	95	87	66	107	96	107	63
315	96	66	80	82	89	78	96	87	101	106	86	108	16
004	96	16	16	81	85	85	96	84	66	107	105	109	76
200	95	100	11	83	98	73	96	80	101	107	16	115	9.8
630	95	95	11	82	98	92	16	82	104	106	96	114	06
900	06	95	15	82	88	62	97	81	105	108	93	111	88
1000	87	87	75	95	88	80	96	4	105	109	95	111	87
1250	06	90	72	82	90	80	96	80	103	101	93	110	98
1600	93	93	75	87	86	87	97	82	105	108	46	111	68
2000	95	16	72	92	96	91	16	83	105	109	96	112	06
2500	16	95	73	84	93	87	96	96	104	108	86	112	06
3150	66	96	12	94	16	98	96	83	102	105	86	111	69
4000	102	66	69	*6	109	102	105	88	103	106	102	112	16
2000	101	101	29	85	100	26	86	84	101	103	100	114	06
6300	105	103	9	90	104	92	46	82	104	100	102.	110	06
8000	117	114	61	98	116	102	108	93	66	66	111	107	101
10000	122	116	96	93	105	95	96	81	95	95	103	105	06
OVERALL	123	119	100	105	117	106	112	101	115	120	115	124	109

TABLE: MEASURED SOUND 2 OCTAVE BAND		ESSUR	PRESSURE LEVEL	(09)) I DE	IDENTIFICATIONS OMEGA 3.2
NOISE SOURCE/SUBJECT	-	-	OPERATION	. NO			~					- TES	TEST 71-019-11
T-38A AIRCRAFT GROUND CREW NEAR FIELD NOISE	LEVELS											P P 0	04 DEC 74
						OCATIO	LOCATION/CONDITION	NOILI					
FREG	1/4	1/8	2/4	2/8	2/2	3/0	3/E	6/9	7	5/4	970	5/E	0/9
31.5	93	95	87	68	92	90	68	87	93	102	86	66	93
63	96	66	90	76	96	84	16	76	96	106	104	105	101
125	100	103	86	100	100	88	100	96	103	111	101	108	104
250	66	105	68	92	93	83	100	93	104	111	102	112	9.6
500	96	102	81	88	06	83	102	87	106	111	106	118	96
1000	76	95	79	87	16	84	101	84	109	113	16	115	95
2000	100	66	7.8	90	101	93	101	88	109	113	102	116	16
4000	105	104	1.4	95	109	103	106	06	107	109	105	117	98
8000	123	118	99	100	116	103	108	93	105	103	112	112	101
DWFRAIL	123	0		4.00				,					

TABLE: MEASURES OF	HUMAN	HUMAN NOISE	EXPOSURE	URE								DOENTI	OMEGA 3.2
NOISE SOURCE/SUBJECT		÷.	OPERATION	. NO			~ -					S S	
T-3AA AIRCBAFT							•					100	04 DFC 74
GROUND CREW							-						
NEAR FIELD NOISE L	EVELS	-					-) PAGE	E H1
And Street, St	12					LOCATION/CONDITION	NCON	ITION			2		
	1/4	1/8	2/A	8/2	2/6	3/0	3/E	0/	4/F	5/3	970	5/E	0/9
HAZARO/PROTECTION C-WEIGHTED OVERALL A-WEIGHTED OVERALL	ONDOS TI	ND LEVEL		COASLC IN DBC)	080	AT EAR							
NO PROTECTION		=		MINUTES	FOR ONE	NE		PER DAY	(AFR	161-35, JULY	, JULY	73)	
	119	116	66	104	115	105	111	100	115	120	113	123	108
OASLA	121	1117	87	101	117	106	111	26	115	118	113	123	104
	a	۵	585	52	۵.	11	4.5	20	2.2	a	3.2	۵	15
EAR HE	JFFS	1 11 14	-	AND THE REAL PROPERTY.			:						
UASLA	9	*	200	100	16	0.00	180	200	600	45	06.	90	92
AMERICAN OPTICAL 1	TOO EAR		200	100	24.7	200	607	300	202	1	7.10	7	***
	6		73	11	88	92	82	73	94	96	98	85	8.1
-	09	120	096	096	240	096	619	096	480	170	339	120	807
V-51R EAR PLUGS			•	;		;		;	:				
UASLA	26	0	69	2	90	2	00	2	99	26	69	9	
AMERICAN OPTICAL 1	120 1700 EAR	240 R MUFF	S PLUS	960 V-51R	339 EAR	960	57.1	960	240	120	101	9	096
OASLA*	83					63	20	25	75	2.8	73	82	65
T T COUNTY COUNTY	571 960	960	096	096	096	096	096	096	096	960	096	619	096
	92	100		7.1	48	75	6 8	0.9	**	•	778	90	7.6
1	120	240	960	960	339	960	619	960	285	143	480	7.2	960
COMMUNICATION PREFERRED SPEECH PSIL		INTERFERENCE 97 99	E LEVEL	L (PSIL 88	1 S	08)	101	99	106	112	102	111	76
ANNOYANCE PERCEIVED NOISE	LEVEL,	TONE	CORREC	TEO (P	NLT I	CORRECTED (PNLT IN PNDB)							
PNLT		131	104	119	133	124	129	114	129	132	129	138	122

. BASED ON CALCULATED SPL SPECTRUM UNDER PROTECTIVE DEVICE. P ADDITIONAL EAR PROTECTION REQUIRED.

TABLE 4

TEST CONDITIONS FOR FAR-FIELD NOISE MEASUREMENTS

T-38A Aircraft, Ground Runups Eglin AFB FL, 14 July 1971 Edwards AFB CA, 21 September 1972

Aircraft Engine Operation

Idle

(Eglin AFB)

Both Engines 48 % RPM, Core Speed

70 % Engine Runup (Englin AFB) Both Engines 70 % RPM, NC

75 % Engine Runup (Edwards AFB) Both Engines 75 % RPM, NC

330 C. Exhaust Gas Temperature

800 LBS/HR, Fuel Flow

Trim Check (Edwards AFB) Both Engines 94 % RPM, NC 520 C, EGT 1,500 LBS/HR, FF

Military Power (Eglin AFB) Single Engine 100 % RPM, NC

Maximum Power (Afterburner, Eglin AFB) Single Engine 100 % NC

Military (Edwards AFB) Both Engines 100 % RPM, NC 640 C, EGT 2,100 LBS/HR, FF

Maximum Power (Afterburner, Edwards AFB)

Both Engines 100 % RPM, NC 640 C, EGT 2,100 LBS/HR, FF (Plus afterburner)

Meteorology

Eglin AFB

Temperature
Bar Pressure
Rel Humidity
Wind — Speed
— Direction

30.6 C 0.760 M Hg 63 % 1 M/Sec (2 kts) 250 Deg

Edwards AFB

Temperature
Bar Pressure
Rel Humidity
Wind — Speed
— Direction

11.1 C 0.701 M Hg 46 % Calm

5	1/3 OCTAVE		S HET	METERS	BAND 75 METERS	60											-	1.4	2
T-38A J85-GE-	ISE SOURCE/SUBJEC T-38A AIRCRAFT J85-GE-5A ENGINE FAR FIELD NOISE	ECT:		5	OPERATIONS 10LE 48% RPH 80TH ENG FREE FLO	ION: RPH, ENGINES FLOM	ES				METEOROLOGY TEMP BAR PRESS REL HUMID	OLOGY: PRESS HUMID		OEX	5		20 0CT	7 75	
FREQ (HZ)		10	20	30	9	50	0.9	A D Y	ANGLE (DEGREES)	ES)	110	120	130	140	150	160	170	180
25	,,																		
0,			674	Ī	Ĭ	>69		704	>99	704	704	>04	576	714	714	>69	×69	>99	7.0
20	714					734	724	734	724	2	22	2	714	12	75	75	724	>69	724
900	674		284	686	200			269	269	200	714	704	724	714	73.	714	200		2 4
100	>69	. 684					704	704	>69	714	724	734	734	754	92	734	999		,
125	714		73					73	73	75	16	25	22	11	62	92	249		
160	74							62	18	80	80	62	11	52	80	7.8	999		614
200	714							74	12	92	77	2;	9:	15	76	12			
215	57							72	73	7.5	75	172	2 42	14	7.7	72	626		
004	99		69	72	22			72	73	75	12	1,6	75	75	1.4	72	68	524	55
200	67							89	69	73	14	75	75	14	72	29	59		514
630	19	19			Ī	09		63	63	99	69	20	73	72	69	49	574		
800	61					63		63	49	49	69	69	72	69	99	65	65	434	484
1000	63	9	62	62		62	61	09	65	61	99	99	69	29	62	62	26	424	454
1250	19	63	62			+9	61	66	58	4	61	49	29	65	29	49	96	***	484
1600	72	69	7.1			69	68	49	9	61	29	69	89	20	89	7.1	99	53	26
2000	70		7.1	71	72	69	68	62	66	58	66	49	99	89	29	20	63	53	24
2500	99		69			+9	29	28	26	55	22	62	99	20	69	7.1	19	24	55
3150	99		99	19	9	+9	61	66	55	24	24	9	49	89	99	89	61	20	20
4000	94		82	80	79	20	92	14	69	69	19	11	29	72	73	80	73	63	9
2000	7.0	7.1	7.1	72	7.1	99	69	29	61	58	25	62	49	89	29	89	63	53	55
6300	70	7.1	72	72	7.1	69	99	79	28	28	25	63	63	29	69	69	61	51	52
9000	81	81	82	83	85	11	11	16	69	99	99	7.	67	74	20	73	89	28	58
10000	69	69	73	73	72	99	6.8	99	9	58	25	60	61	63	61	63	28	4	20
OVERALL	L 87	87	88	87	87	84	85	8 5	70	85	98	98	98	48	87	98	80	72	76

S	1/3 OCTAVE DISTANCE =	TAVE BAND	BAND 75	METERS														OMEGA	1.4	96
NOISE SO	SOURCE/SUBJEC	BJEC			90	OPERATIONS	* NO					TEORG	METEOROLOGY					RUN		
T-38A	AIRCRAFT	IFT				70% R	H					BAR F	PRESS	7. =	W 09	91		20 OCT	1 75	
J85-GE-5A FAR FIELD	J85-GE-5A ENGINE FAR FIELD NOISE	SE				FREE FLO	FLOW	S				REL	OIND	"	1			PAGE	2	
FREG	_								A	ANGLE (DEGREES	ES)								
(42)		•	10	50	30	04	20	09	7.0	80	90	100	110	120	130	140	150	160	170	180
25																				
31.5	2																			
0,		674	674	674	67.					704	>69	704		714	714	704	>69	684	674	>69
20		204	684	×69	714				72	734	73	73		92	92	15	75	714	68	20
63		684	674	634	•69				17	724	714	714		75	164	754	744	*69		89
00		229	999	674	68				70	68 <	684	>69		1.4	14	724	714	674		62
100		674	×99	999	· 19	684	674	704	204	204	204	>69	734	144	11	92	144	714		
125		714	269	724	724					1.4	14	15		78	81	80	18	73		
166		28	22	80	29					83	82	82		94	94	9.4	83	7.8		99
200		75	14	78	11					80	28	80		83	80	80	80	73		
250		×69	999	684	•69					72	×69	72		11	15	7.1	1.	*69		
315		>+9	65	99	29					20	69	7.1		22	7.8	73	73	20		
004		69	73	7.1	73	72		73		73	20	73		62	19	92	73	72		25
200		29	69	72	2	11	99	72		72	69	72		80	7.8	92	72	73	204	52
6.30		19	63	29	65	99		69		49	62	49		11	72	29	49	99		
800		19	99	69	9	9		99		63	9	65		15	92	20	67	67	*9	3
1000		63	63	53	79	65	19	65		62	61	49		1.	7.	99	63	65	***	42
1250		63	49	63	65	65		49		9	23	63		72	69	9	79	29	*9	4
1600		69	99	20	99	67	29	99		25	21	9		68	72	7.0	72	14	25	25
2000		72	20	69	69	73		69		28	66	29		67	7.1	89	73	14	26	51
2500		20	20	72	89	11	68	69		28	28	28		69	69	7.0	92	92	28	53
3150		69	89	20	99	69		29		28	96	55		63	89	72	11	73	53	49
4000		15	9/	11	14	73		7.1		9	61	66		49	20	73	75	62	89	54
2000		96	**	98	10	85	78	80		*	12	20		29	73	73	73	11	66	55
6300		22	1	72	11	2	69	20	99	70	61	9	9	49	89	29	99	72	24	20
8000		92	92	11	12	73	10	20		61	29	29	65	20	89	29	20	7.1	24	52
10000		18	62	81	28	78	92	92		29	63	62	65	99	72	11	15	73	22	57
OVERALL		68	98	90	88	88	98	88	87	87	92	98	60	90	90	60	68	87	72	75

5	1/3	1/3 OCTAVE	BAND 75	METERS	s s													OMEGA	GA 1.4	OMEGA 1.4
NOISE SOURCE/SUBJE T-38A AIRCRAFT J85-GE-5A ENGINE FAR FIELD NOISE	SOURCE/SUBJEC	CE/SUBJEC IRCRAFT A ENGINE D NOISE			0	OPERATIONS 75% RPH BOTH ENG FREE FLO	ION: ENGINES FLOW	S		1 5211	20000	METEOROLOGY TEMP BAR PRESS REL HUMIO	PRESS HUMIO	. 701	NIO	9	100000	20 0CT	75	9 0 0
FREQ (HZ)		•	10	20	30	0,	20	0.9	7 DA	NGLE (DEGREES) 90 100	ES)	110	120	130	140	150	160	170	180
25														>99	674	68¢	>69	714		
31.5	2	727	723	,,,,	, 27		67.	664	634	644	654	674	684	684	714	714	734	75		
20		034	654	999	654	>99	>69	704	>69	702	714	734	724	744	11	79	162	78		
63			>19	674	>19		714	714	704	714	734	734	734	764	62	80	90	78		
80		704	>69	>69	>69		714	724	724	714	144	15	11	78	08	81	82	80		
100		204	714	754	754		764	174	154	744	774	62	80	80	82	84	85	90		
125		764	12	164	28	62	000	0 0	82	8 6	80	81	81	000	81	85	82	000		
200		75	75	78	78		* 0	* +	77	78	202	82	5 6	* 6	82	20	200	200		
250		1.4	12	75	16		11	11	14	12	11	80	81	83	84	80	52	52		
315		72	73	74	14		11	25	73	22	14	11	7.8	62	80	7.8	73	15		
004		1.	14	15	14		92	92	14	72	15	92	25	11	11	15	72	73		
200		75	11	16	15		15	73	7.1	69	72	72	75	15	15	72	7.1	20		
630		73	73	73	7.1		73	7.1	99	29	7.0	20	72	25	14	72	69	68		
800		11	72	7.1	69		69	68	99	9	99	68	20	4.2	14	73	11	29		
1000		7.1	7.1	99	68	19	29	29	99	61	99	69	73	15	14	12	69	62		
1250		69	89	99	67		89	99	65	9	69	99	72	14	73	1.1	69	63		
1600		20	69	69	69	68	20	89	99	63	65	29	2	73	7.1	72	20	65		
2000		69	69	69	69		72	69	99	63	63	99	29	20	69	20	69	63		
0067		2)	2	2	27		* ;		60	9	*	99	99	99	69	-	11	69		
3150		69	69	69	0,	69	21	89	99	19	9	62	19	99	9	69	89	63		
0000			200	0 :	60		25	20	**	10	25	9	50	*	63	99	90	29		
0000		22		2:	2:		6	60	*	200	20	20	200	20	200	29	200	200		
9000		200		. 4	23		2.5	2 4	0 0	9 9	91	50	200	200	200	29	200	60		
10000		62	3	61	*	6.5	23	25	22	23	51	55	22	24	25	24	200	24		
OVERALL	1	87	18	18	18	88	89	89	98	98	88	90	96	91	91	16	92	68		

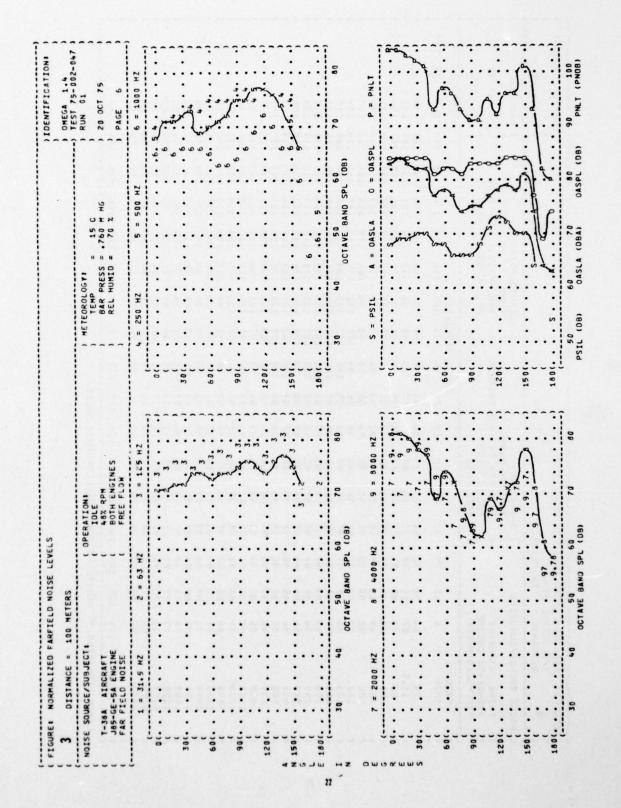
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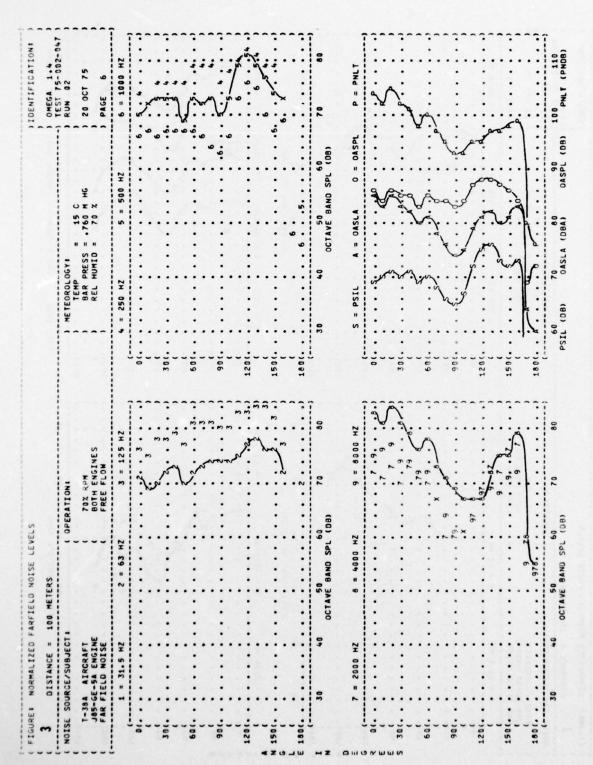
-	2	1/3 OCTA	1/3 OCTAVE		METERS	RS	BAND 75 METERS												OMEGA 1.4	1.4	
102	NOISE SOURCE/SUBJE T-38A AIRCRAFT J85-GE-5A ENGINE FAR FIELD NOISE	SOURCE/SUBJEC A AIRCRAFT GE-5A ENGINE FIELD NOISE	E/SUBJEC RCRAFT ENGINE NOISE	1=		. 0	OPERATION: MILITARY POWER 100% RPH SINGLE ENGINE FREE FLOW		POWER			20000	TEHP BAR BAR REL I	METEORULOGY TEMP BAR PRESS REL HUMIO	_ " " "	31 C 760 H 63 X	9	1	TEST 75-0 RUN 03 20 OCT 75 PAGE 2	T 75-002-047 03 0CT 75 E 2	. 0 - 1
	FRED									A	ANGLE	(DEGREES)	EES)								
	(H2)		0	10	50	30	04	20	9	7.0		9.0	100	110	120	130	140	150	160	170	180
	25							>99	684	999	714	714	>69	754	764	81	81	62	82	84	82
	31.5	5	574	684	574	>99	>69	684	714	724	734	744	744	754	62	82	98	84	84	82	83
	04		>69	704	714	704	104	704	734	154	144	11	754	79	82	85	88	90	9 4	81	84
	20		714	724	704	724	14	734	73	91	11	7.8	78	81	94	89	95	95	40	81	80
	63		724	734	734	754	11	754	754	164	52	80	81	10	88	92	66	96	98	764	11
	80		14	14	92	11	16	11	62	62	80	82	82	96	91	96	16	97	9.4	724	75
	100		11	11	7.8	62	62	80	81	83	83	98	86	89	76	66	102	100	85	734	7
	125		28	19	80	80	81	85	83	85	98	98	06	95	96	101	106	100	87	92	72
	160		91	28	3 1	93	92	10	9 0	90	60	95	93	96	100	103	109	103	50	92	73
	200		90	83	800	400	*	, t	287	900	50	06	92	96	101	104	106	100	82	2:	22
	200		25	60	20	20	200	*	00	000	000	60	76	* 6	101	100	101	500	* 10	2 6	7
	212		2.2	30	20	9 9	9 8	0 4	0 8	00	26	36	* 0	100	105	100	100	100	00	10	10
	200		8 4	88		88	8		9 6	2 2	36	0.6	80	100	107	112	108	101	3	4.4	7.2
	630		81	87	85	88	87	86	91	68	90	92	96	98	103	107	103	96	0 00	11	202
	800		62	83	87	86	88	87	88	91	95	96	98	101	105	109	106	95	82	75	67
	1000		80	85	98	87	87	87	89	06	91	35	96	66	101	105	103	06	91	71	65
	1250		81	84	96	87	88	88	68	91	93	16	96	100	102	102	103	89	19	20	65
	1600		62	83	85	98	98	88	06	68	95	91	16	16	101	96	101	98	75	29	62
	2000		80	83	98	87	87	88	90	96	93	36	95	46	101	16	66	85	16	99	61
	2500		13	82	85	96	96	88	68	06	93	06	16	96	100	68	96	94	73	49	65
	3150		16	19	82	94	94	86	87	88	96	88	95	35	46	46	91	80	20	61	57
	0000		81	62	82	83	94	86	87	88	90	88	93	91	26	96	88	79	7.0	61	99
	2000		73	14	28	80	80	83	8 5	98	88	98	68	8	95	68	98	11	99	58	53
	6300		73	73	11	62	62	82	9 4	84	87	94	87	98	93	87	98	15	69	25	24
	8000		80	72	75	18	16	80	82	81	85	82	84	85	92	98	94	7.	63	24	20
-	00001		69	99	69	17	11	92	11	11	80	81	83	84	68	81	62	69	29	20	45
0	OVERALL	_	93	96	16	86	66	66	101	102	103	105	107	110	114	118	117	111	46	91	90

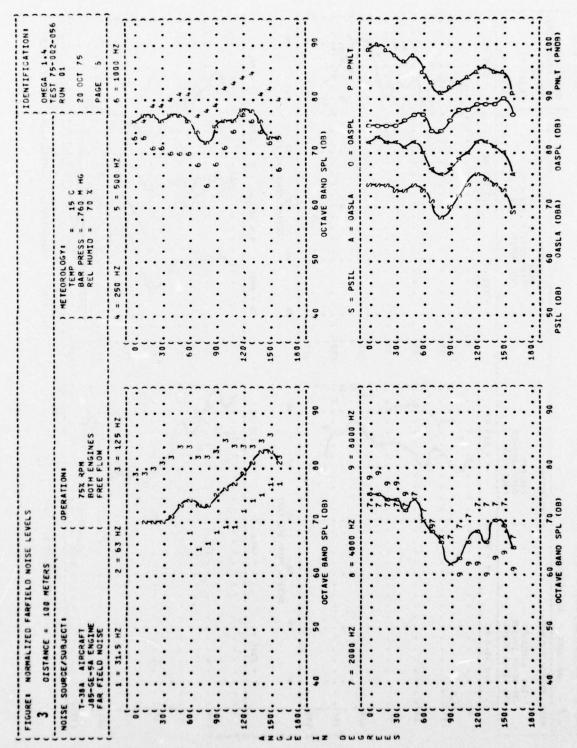
	1/3 OCTAVE	E BAN		PRESSURE	LEVEL	603											IDENTIFICATIONS OMEGA 1.4	1.4	- ×
NOISE SOUR	SOURCE/SUBJEC	ECT		0	OPERATIONS	INC.	0 4				METEOROLOG TEMP	0100 Y				1	TEST 7	m 2	140-
T-38A	-38A AIRCRAFT				100%	SPH A	NO AF	AFTERBURNER	NER		BAR	PRESS		E 0 H	HG	-	20 OCT	22	
J85-GE-5A	JAS-GE-SA ENGINE	w			SINGLE ENGINE	E ENG	INE					HUMID	"	m			PAGE	~	
0303		-					-	-	313	0200000	100	-		-	-				
(147)		10	20	30	99	50	6.0	7.0	80	90	100	110	120	130	140	150	160	170	180
		:	:	;			;		3			:)
52	17	28	7.8	78	11	62	81	62	28	80	80	82	83	68	91	92	89	87	85
31.5	90		80	78	80	91	82	82	81	81	83	8	87	93	16	76	89	98	82
04	81		82	81	81	94	84	95	94	83	98	87	92	96	96	46	60	83	11
20	81		81	81	96	85	84	85	83	98	98	68	76	96	101	86	85	7.8	20
63	82		83	84	85	80	87	98	87	89	68	95	86	102	104	102	48	78	17
90	18		84	85	98	87	68	89	89	90	95	95	102	105	107	104	82	18	73
100	87	98	87	88	87	91	91	95	93	46	36	66	106	111	110	107	82	18	75
125	88		90	96	90	35	93	46	95	26	100	103	110	114	113	109	82	4	16
160	06		91	92	92	16	96	16	96	66	101	105	110	115	114	111	83	80	16
200	88		9.6	96	91	95	46	96	95	97	100	105	111	112	112	111	83	19	75
250	87		88	68	90	95	93	96	16	26	66	105	113	110	110	109	81	11	73
315	85		88	90	95	36	93	16	95	96	66	105	113	115	110	108	81	16	72
004	67		90	95	16	16	96	16	96	101	103	109	115	118	116	110	29	16	72
200	68		92	93	96	96	98	100	100	103	107	110	119	119	118	111	4	16	73
630	98		88	68	93	36	96	98	95	86	105	101	116	116	113	108	11	73	202
800	90		96	68	91	95	93	6	96	66	101	108	110	117	112	105	73	11	68
1000	48		82	85	88	90	91	96	93	96	103	106	111	112	108	104	72	69	99
1250	79		83	85	88	90	68	56	76	66	100	107	107	110	105	100	7.1	68	99
1600	90		84	85	83	90	68	92	36	96	96	103	101	109	104	100	69	29	99
2000	0.9		81	83	98	88	87	95	95	16	93	103	105	101	101	46	89	29	65
2500	79		82	83	96	87	98	95	90	95	93	101	103	104	66	91	69	69	9
3150	7.4		78	90	84	85	82	90	68	93	16	16	101	102	66	68	63	62	62
0000	81		83	82	9.4	85	83	06	88	35	95	86	100	103	66	88	63	62	61
2000	73		16	11	81	83	80	98	94	88	91	96	46	101	96	85	59	28	57
6300	7.3		16	11	79	81	4	85	82	85	87	16	16	66	91	82	66	25	55
8000	81		84	96	91	81	80	83	81	82	98	93	93	98	90	80	96	25	53
10000	69		7.1	74	73	92	14	18	92	62	83	89	90	96	87	75	51	64	47
OVERALL	98	66	100	101	103	104	105	108	101	110	113	118	124	126	124	120	96	95	89

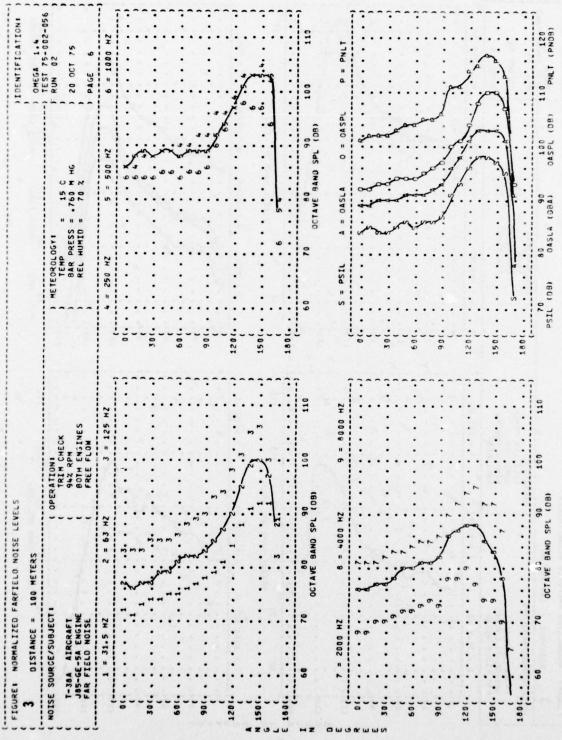
5 1/3	HEASURED S 1/3 OCTAVE DISTANCE =	BAND 75	METERS		רביצר	(03)											OMEGA 1.4	1.4	
NOISE SOURCE/SUBJEC	CE/SUBJEC	:		40)	ERATI					-	ETEOR	100 Y		:		-	RUN O	3-002	960-
T-384 ATR	ATRCRAFT				MILITA	TARY PO	OWER				RAP PRES	PERC		111	9		שים מכד	75	
	FNGTNE				HOTH	NGINE					951	THE			2		,		
FAR FIELD	NOISE			_	FREE					. ~)		-	PAGE	2	
FREG								A	NGLE	DEGR	·								
(HZ)	0	10	20	30	0,	90	60	2.0	80	9.0	100	110	120	130	140	150	160	170	180
25	704	704	724	744	744	734	754	744	77	7.8	77	80	83	86	06	35	91	88	
31.5	14	22	15	75	75	16	11	78	90	80	80	82	85	91	46	76	96	06	
04	16	7.8	16	16	78	78	4	81	81	82	83	85	68	16	96	66	96	91	
90	7.8	18	7.8	62	29	62	81	82	94	84	85	96	91	96	100	100	9.6	88	
63	62	4	62	81	81	81	83	83	85	85	87	68	93	66	102	104	86	86	
9.0	80	81	81	81	82	83	4 8	85	98	88	89	91	76	101	105	104	100	85	
100	82	83	83	84	83	85	9 8	87	68	16	35	76	86	103	108	107	102	82	
125	94	85	94	84	85	98	87	88	90	93	16	95	66	105	109	101	103	94	
160	85	85	96	87	87	87	88	06	95	93	95	26	100	104	109	108	101	80	
200	87	98	88	88	88	88	8 8	06	35	16	96	98	101	104	106	101	100	19	
250	68	88	89	91	91	91	91	95	34	95	98	100	104	109	104	108	102	81	
315	68	88	91	68	91	91	91	35	93	76	96	98	101	108	106	106	101	80	
004	06	91	91	91	91	95	91	35	95	95	26	66	102	108	110	107	101	82	
200	06	91	91	96	91	95	06	91	95	93	76	26	101	101	108	108	101	82	
630	88	68	68	90	90	91	8 9	06	90	91	93	96	100	103	101	106	86	62	
800	87	68	88	68	88	68	87	88	68	91	93	26	101	103	105	106	16	78	
1000	87	89	87	96	80	80	9 8	87	88	90	93	46	101	103	105	105	96	15	
1250	85	86	85	85	96	85	86	88	89	91	76	98	101	102	104	104	96	25	
1600	83	84	84	96	96	98	88	88	90	91	16	46	100	101	103	103	96	73	
2000	81	84	83	96	96	86	87	88	90	91	93	96	26	66	101	101	96	20	
2500	80	83	83	96	96	98	87	89	06	91	93	96	97	86	100	66	93	68	
3150	92	80	90	85	82	82	1 8	85	96	88	90	95	93	16	96	96	87	63	
000+	75	13	19	80	80	80	82	83	85	96	88	90	91	35	16	93	85	60	
2000	72	15	15	16	92	11	7.8	81	82	83	85	87	88	88	90	91	81	26	
6300	69	7.1	12	72	72	12	15	11	78	80	81	83	9.4	94	88	99	92	51	
8000	62	99	99	67	29	69	7.1	72	73	75	91	78	80	29	83	84	7.1	46	
10000	65	62	49	19	63	9	29	68	69	11	73	25	11	11	80	80	68	45	
				1															

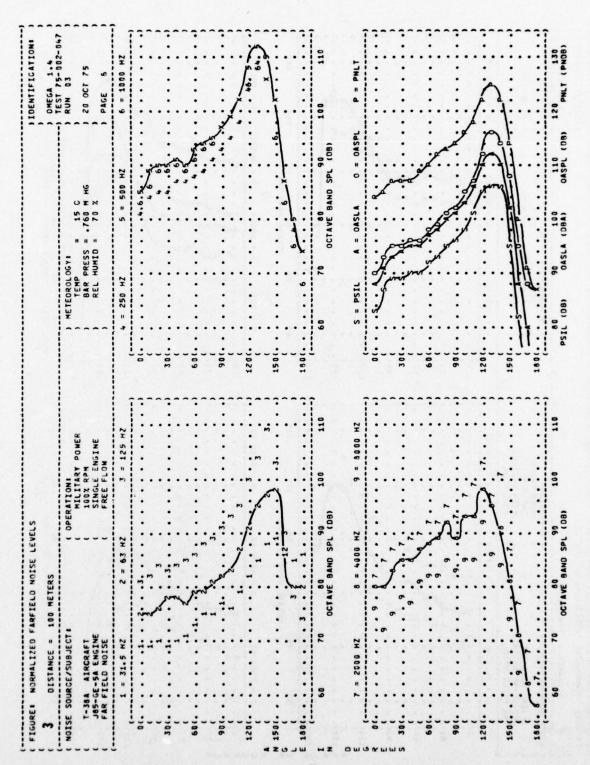
5	1/3 OCTAV DISTANCE	>	E BAND = 75 METERS	HETERS	ERS													OMEGA	A 1.6	OMEGA 1.4
NOISE SOI	SOURCE/SUBJE	JBJEC	113		90	PERATIONS	ERATION: MAXIMUM POWER	! ~				ETEOR	HETEOROLOGY TEMP					RUN	70	940-2
7-384 AII 385-6E-5A FAR FIELD		CRAFT ENGINE NOISE				100% BOTH FREE	100% RPH AND BOTH ENGINES FREE FLOW	4	FTERBURNER	RNER		REL	PRESS		101	9		20 OCT	2 2	
FREG									Ā	NGLE	(DEGREES)	EES)								
(ZH)		•	10	20	30	0+	20	60	7.0	90	9.0	100	110	120	130	140	150	160	170	1 80
25		84	83	82	*	83	98	98	83	85	87	85	88	92	86	66	100	66		
31.5	2	18	98	87	87	98	88	87	87	68	88	90	93	96	101	105	103	102		
0,		87	88	87	86	88	88	8 8	06	96	91	36	96	100	100	107	107	104		
20		87	88	88	89	68	91	95	95	93	93	56	98	103	107	111	108	102		
63		88	68	06	90	91	06	6	93	76	95	86	100	105	10	111	109	103		
000		000	26	06	15	56	26	*	35	35	86	66	104	109	114	114	111	106		
100		25	95	25	* 6	* 6	**	9 0	000	5 5	100	102	100	113	118	115	114	101		
160		36	93	76	96	96	96	96	26	100	102	103	106	111	118	116	115	108		
200		93	93	96	96	96	95	26	86	100	101	104	108	110	114	114	114	106		
250		16	36	16	26	26	46	86	98	100	102	104	110	113	113	112	114	108		
315		*6	96	96	26	16	26	26	98	98	101	104	106	111	113	109	110	104		
004		16	65	96	16	16	16	16	86	100	103	105	108	111	114	112	109	105		
200		93	96	96	96	96	86	96	86	86	100	103	106	110	111	111	107	101		
630		90	93	95	16	*6	96	16	96	96	98	102	106	109	111	110	106	66		
800		90	35	93	93	93	95	63	16	95	26	102	106	111	113	109	106	96		
1000		68	91	91	91	92	35	91	93	16	96	100	105	108	110	108	104	95		
1250		18	83	88	88	06	06	06	92	15	26	100	105	108	110	101	102	16		
1600		85	68	87	87	68	06	06	93	98	46	66	103	106	108	105	100	95		
2000		85	68	98	98	89	89	61	35	95	46	66	102	105	107	104	66	06		
2500		82	87	84	85	87	88	06	91	93	96	26	66	103	105	101	96	86		
3150		52	85	81	83	85	86	87	88	90	93	96	26	100	102	98	93	82		
4000		16	48	80	81	83	84	86	87	88	35	46	95	66	101	16	91	81		
2000		73	19	15	11	18	80	60	83	85	88	91	91	95	98	93	88	78		
6300		29	73	10	72	73	15	16	7.8	80	83	85	98	91	16	88	83	7.1		
8000		65	20	68	69	7.1	73	14	92	77	81	82	84	9.0	95	88	80	99		
10000		29	65	63	99	99	99	69	7.1	72	92	11	81	98	95	98	7.8	61		
OVERALL		104	105	106	106	107	107	108	108	110	112	115	118	123	126	125	124	118		

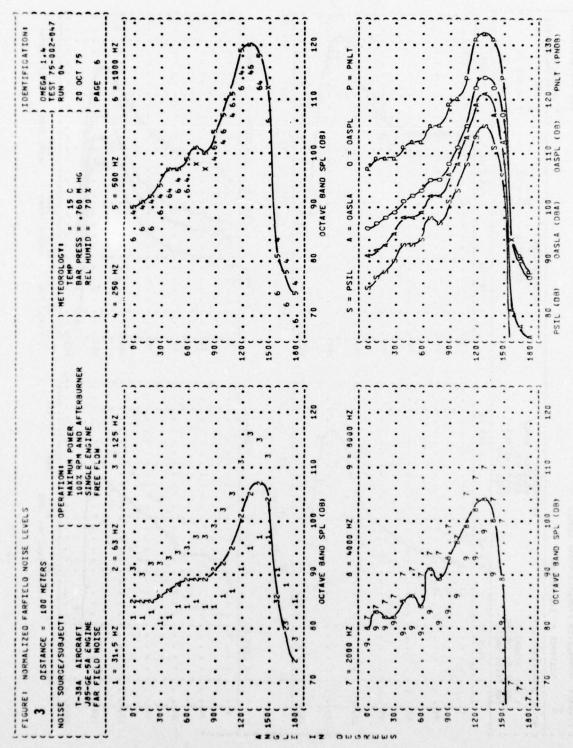


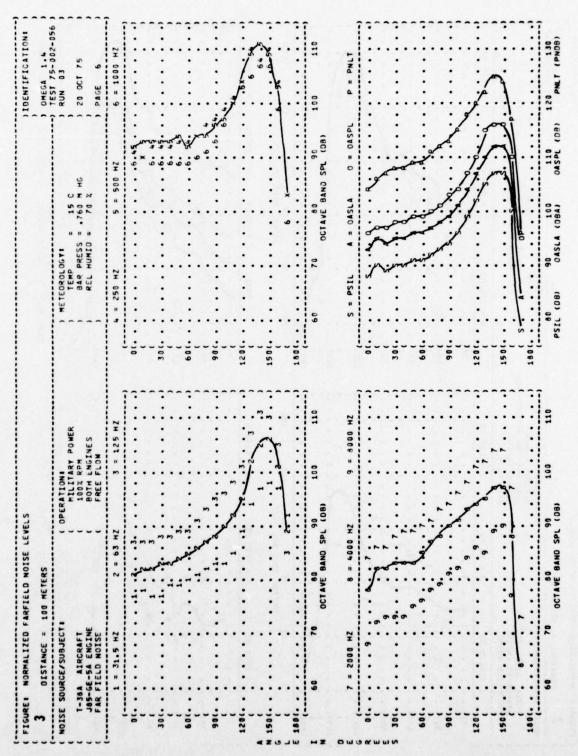


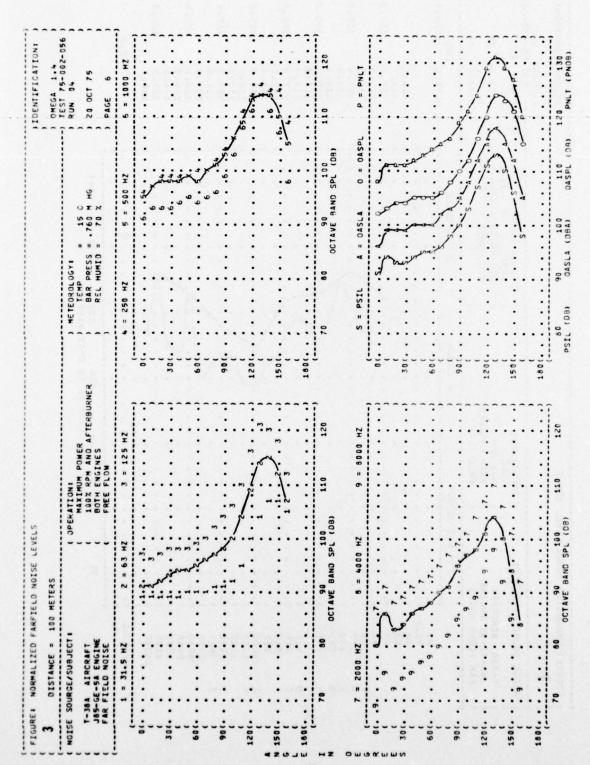




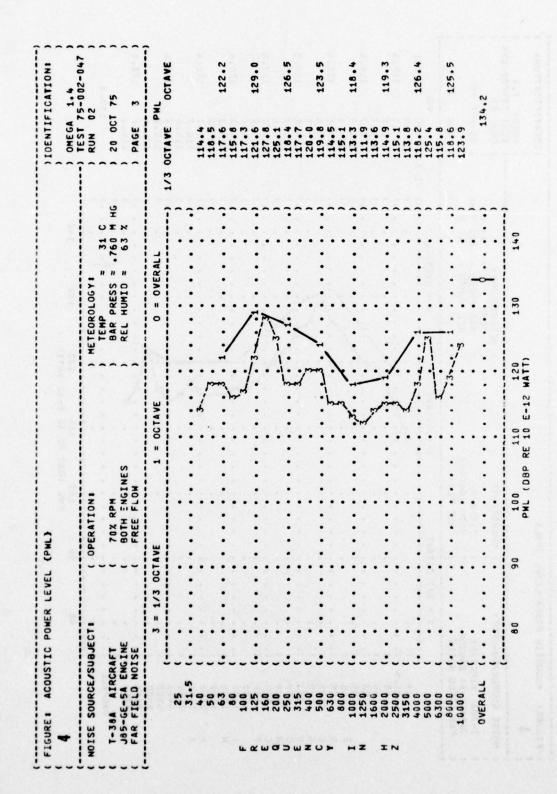


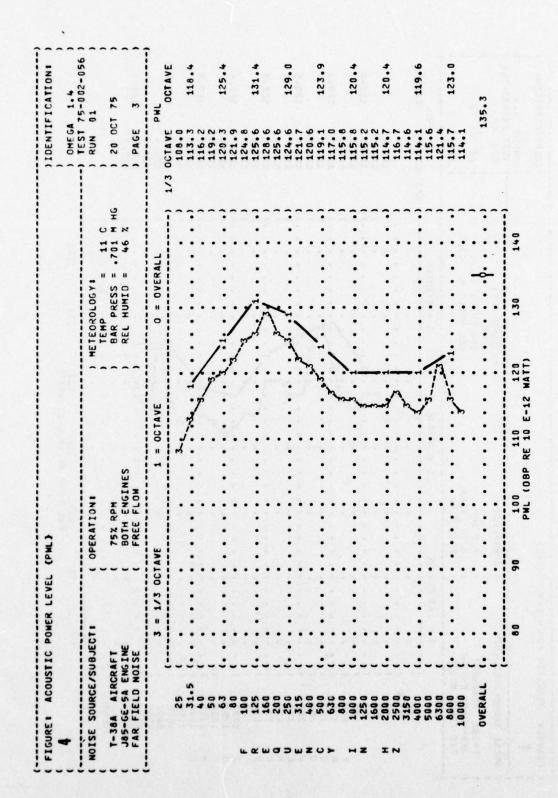


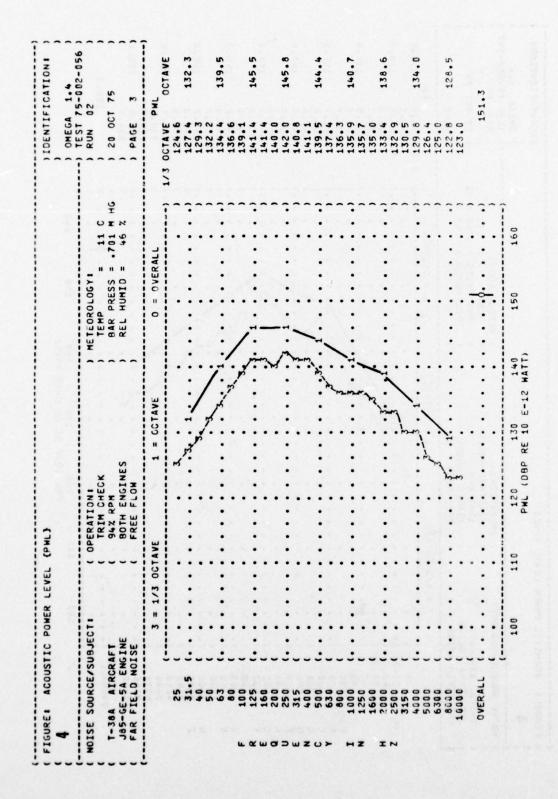


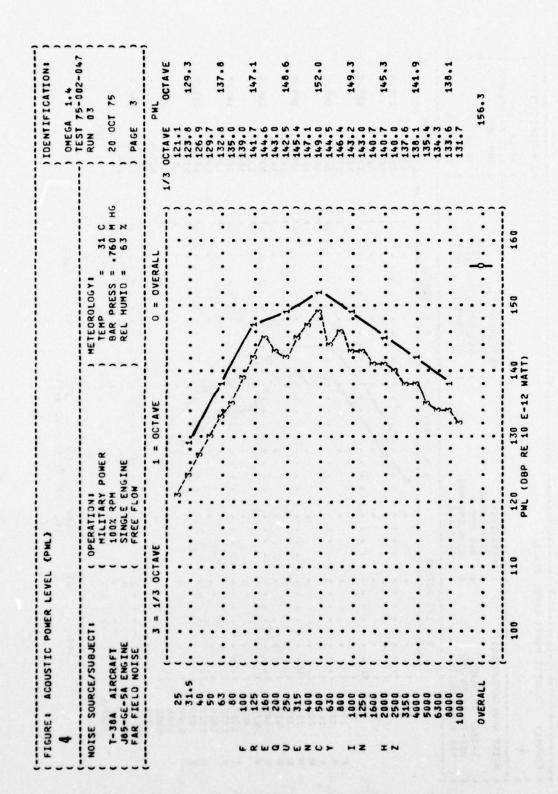


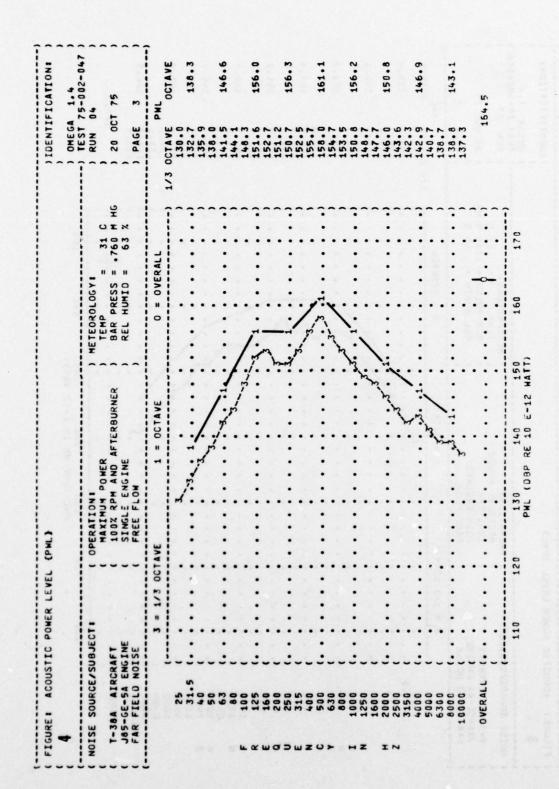
) OMEGA 1.4
NOISE SOURCE/SUBJECT T-38A AIRCRAFT J85-GE-5A ENGINE FAR FIELD NOISE	/SUBJECT # ICRAFT ENGINE NOI SE	(OPERATION: (IDLE (48% RPH (BOTH ENGINES (FREE FLOM		METEOROLOGY: EMP = 31 C BAR PRESS = .760 M HG REL HUMID = 63 2	RUN 01) 20 0CT 75) PAGE 3
	3 = 1/3	OCTAVE	1 = OCTAVE	0 = OVERALL	PW
25		٠	•		1/3 UCIAVE UCIAVE
			/		114.5
63			~~		117.7 122.3
00	•				
100	•		<i>;</i> /		
160					123.6
200		•	*···		
315		•			118-3
005					118.9
200				1	117.2 121.7
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1250	•		· /	•	
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2500			· · · · · · · · · · · · · · · · · · ·		111.8
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OVERALL				-	139.2
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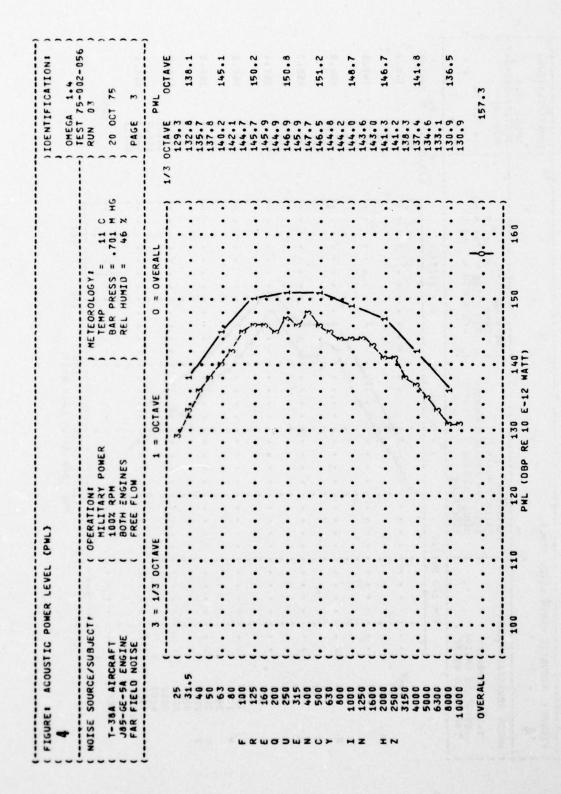


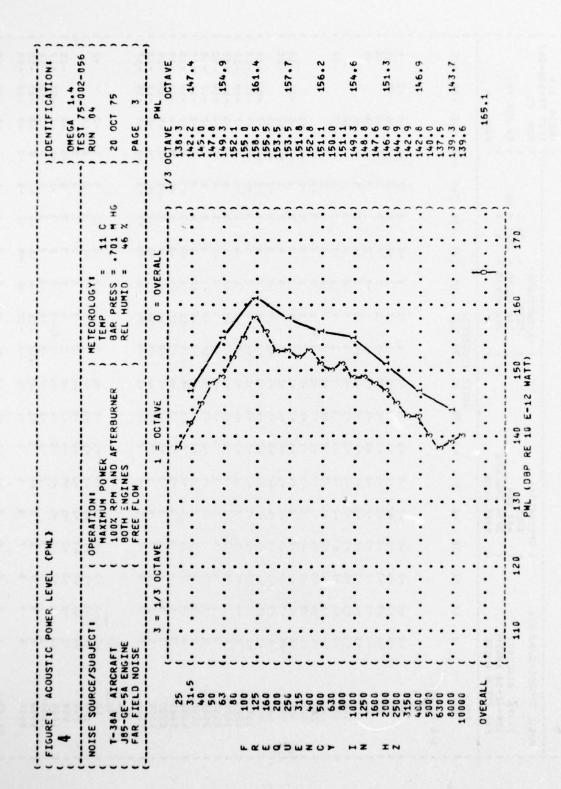












																	OMEGA	11.4	
NOISE SOURCE	SOURCE/SUBJEC	=		00	PERATION	. NO				1	ETEOR	METEOROLOGY	_			-	RUN	01	*0-7
T-38A AI	RCRAFT				TOLE						BAR	PRESS		760 H	9		20 001	27 75	
J85-GE-5A ENGINE FAR FIELD NOISE	ENGINE				FREE	BOTH ENGINES FREE FLOW	ES				REL	HUMID					PAGE	•	
FREQ (HZ)	9	10	20	30	3	5.0	9	7 a	ANGLE	(DEGREES) 90 100	EES)	110	120	130	140	150	160	170	180
1/3 OCTAVE																			
31.5																			
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630	*	-3	7	-3	1	-1	-5	*	-5	-5	2	2	2	*	-3	1	-10		
800	-5	7	*	4	-5	-	-2	1		-5	-	2	9	m	-	7			-18
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31.5																			
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NOISE SOURCE/SUBJEC	/SUBJECT	=		40)	OPERATION	INC				-	METEOROLOGY	DLOGY	-			1	RUN	75-002-05
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14-38A AIRCRAFT	RAFT				75% RPH ROTH FNGTNES	PMETN	53				BAR	PRESS		101 H	9		20 OCT	1.5
FAR FIELD NOISE	NOISE				FREE	FLOW				-				- 1		-	PAGE	,
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LLI	SOURCE/SUBJECT:		00	FRATI	CHECK					TEMP	0106 Y					RUN	2	,
1-384 AIRCRAFT J85-GE-5A ENGINE FAR FIFLD NOTSE				942 R	942 RPH BOTH ENGINES	ES				BAR REL	BAR PRESS REL HUMID		01 H	9		20 0CT	12	
							A	NGLE	COEGRE	i S	-		-					
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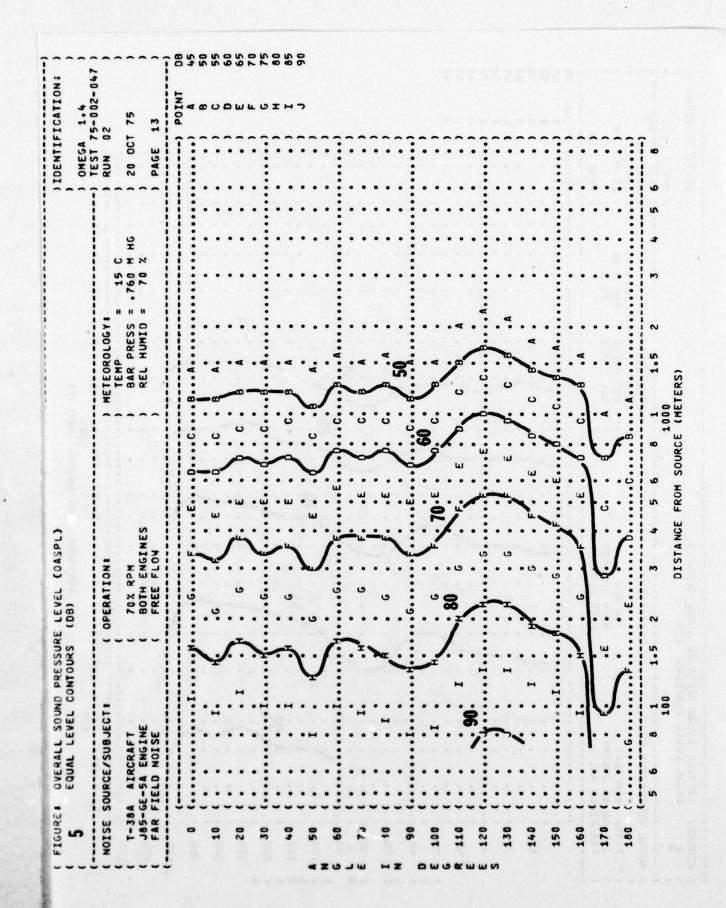
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NOISE SOURCE/SUBJEC	SUBJE	cT:		0	ERATI	INO	-			~	ETEOR	010G				-	RUN	03	
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J85-GE-5A ENGINE	NGINE				SINGLE ENGINE	EENG	INE				REL	REL HUMIO	. "	63 %		•	2		
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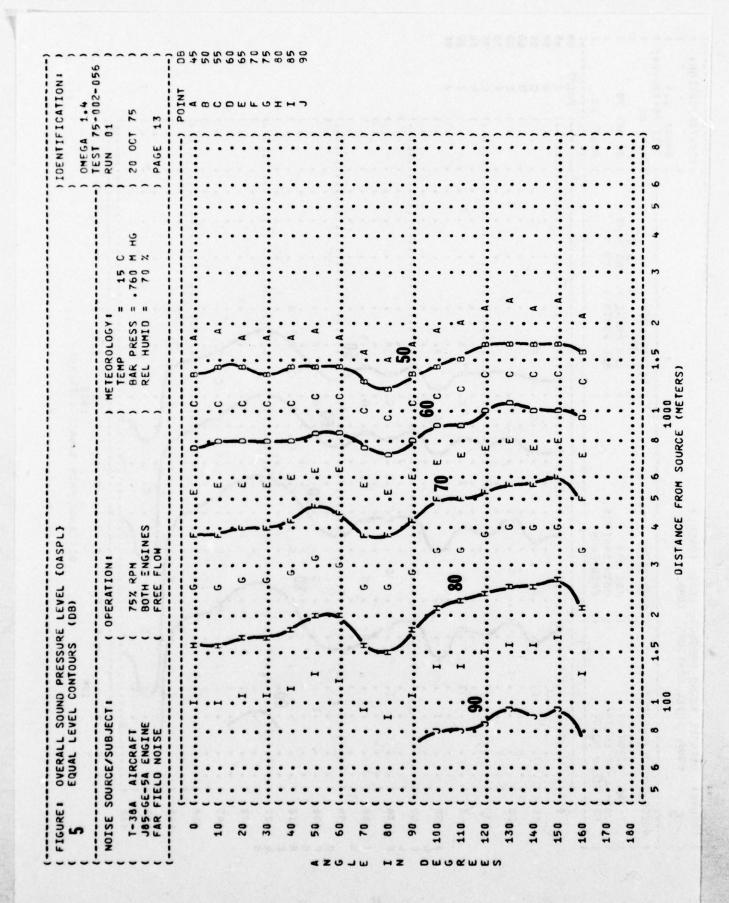
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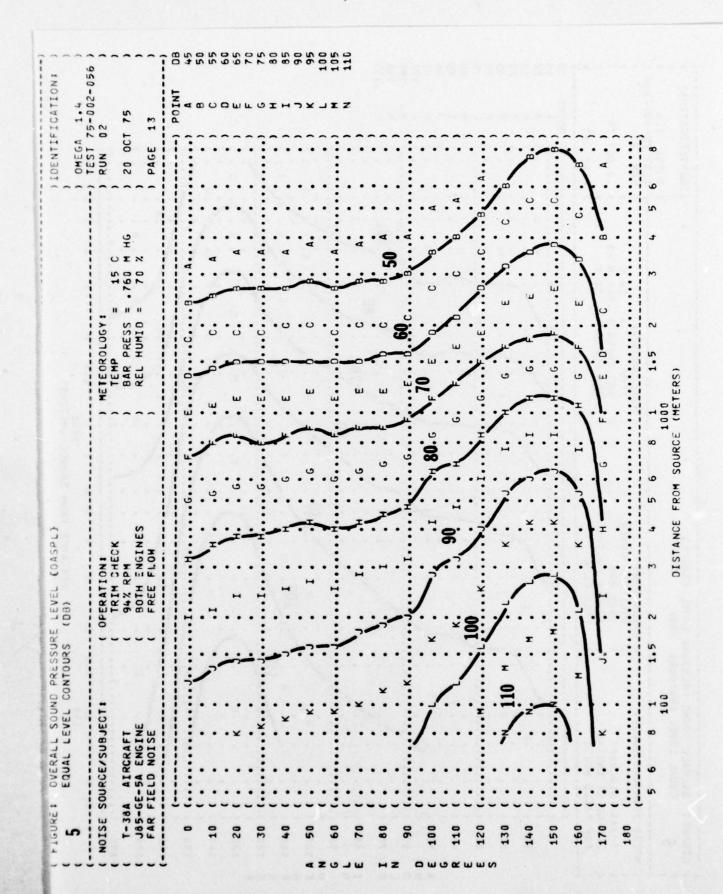
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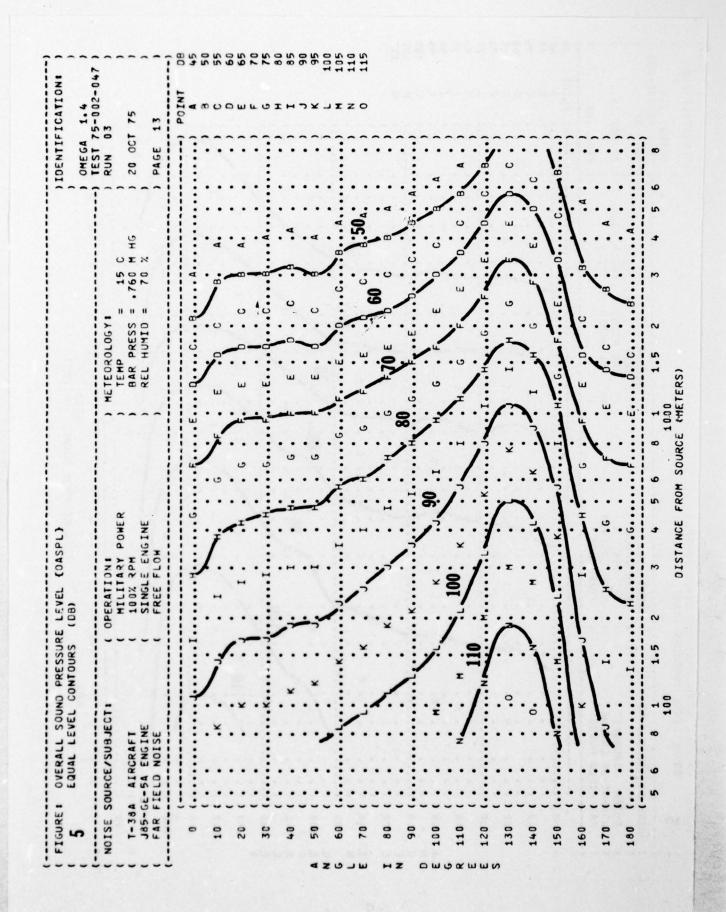
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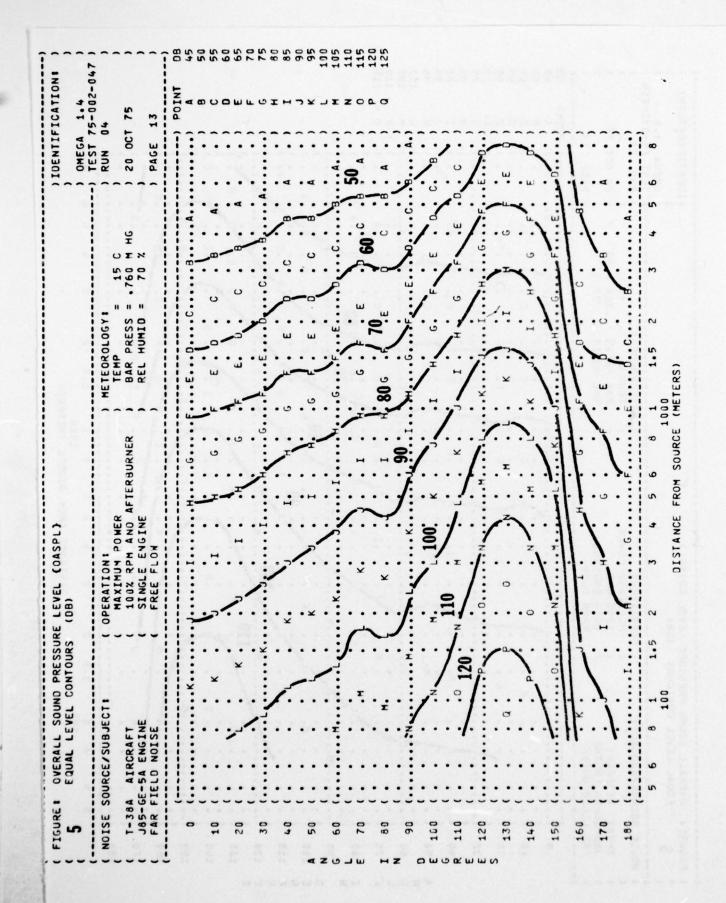
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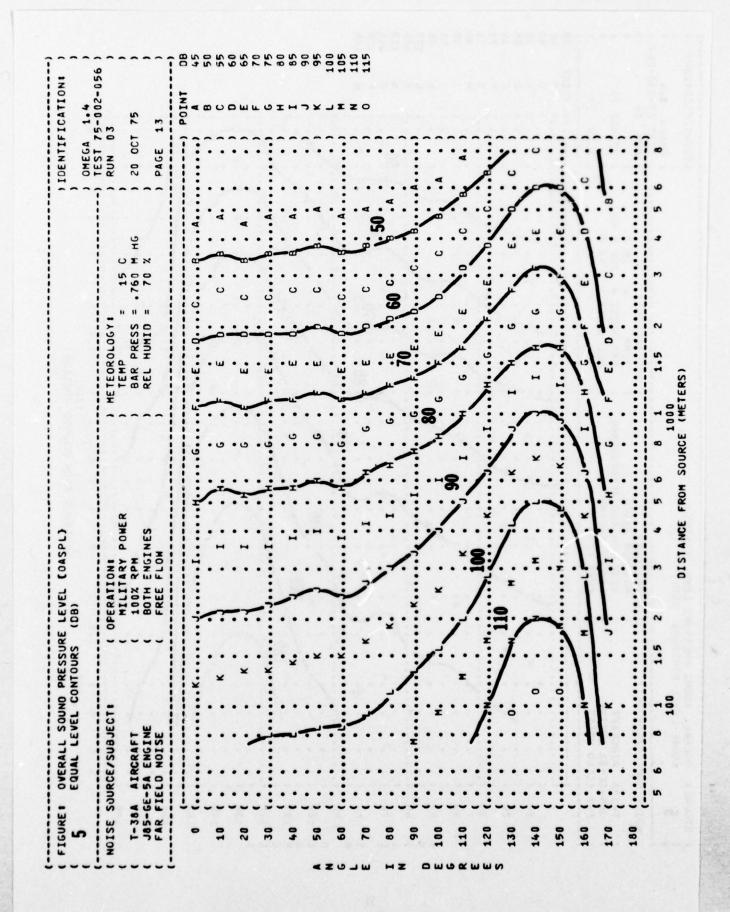


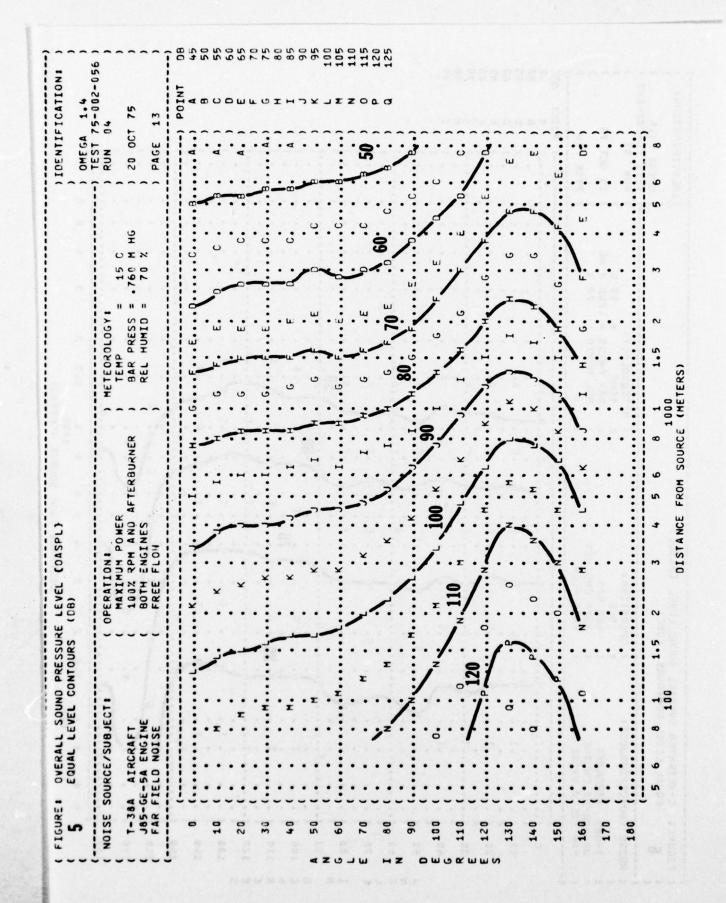


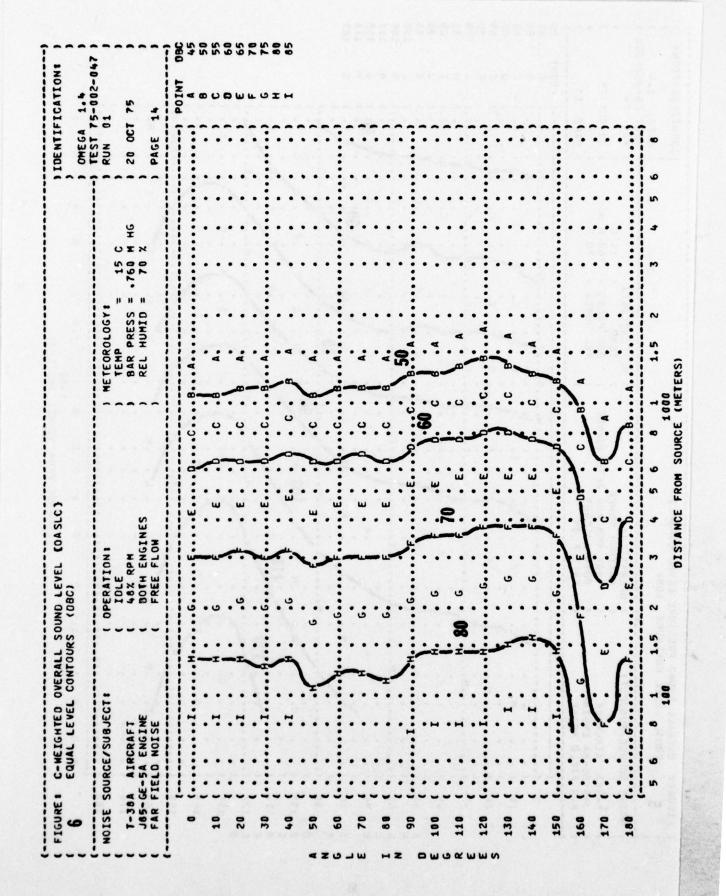


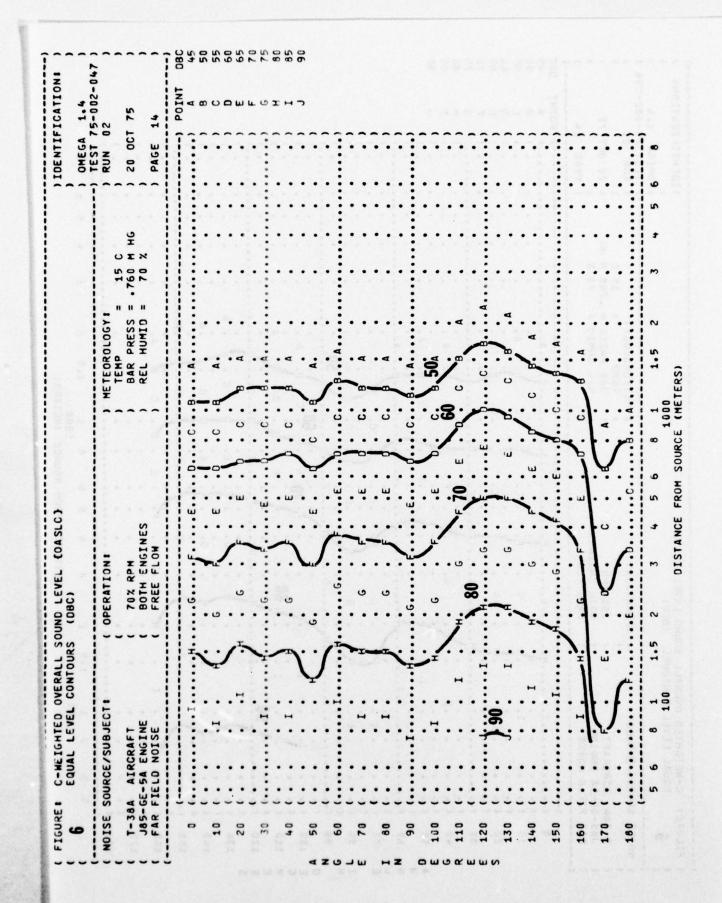


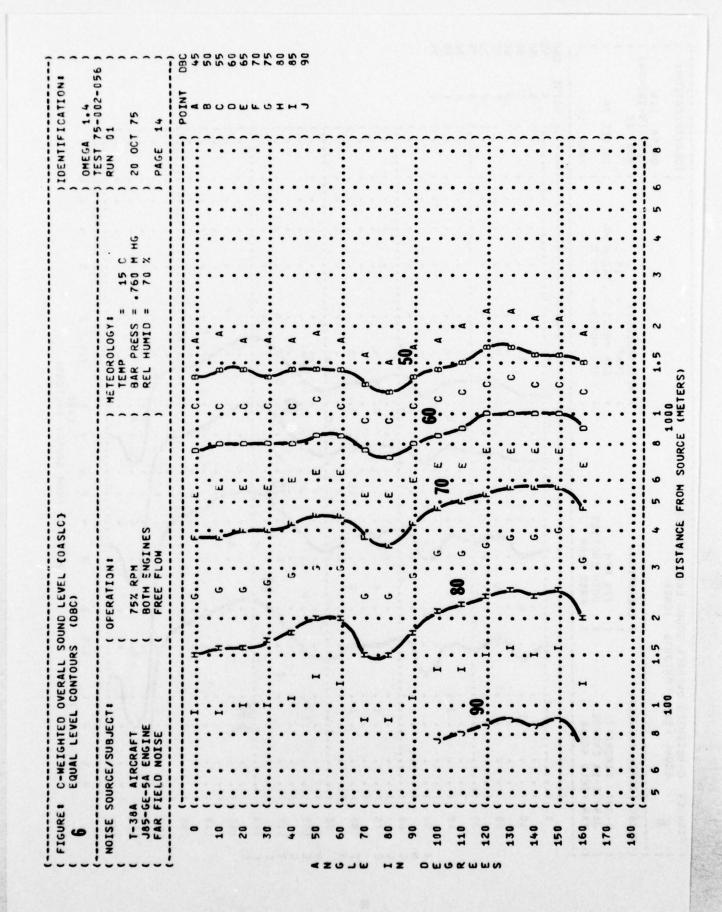


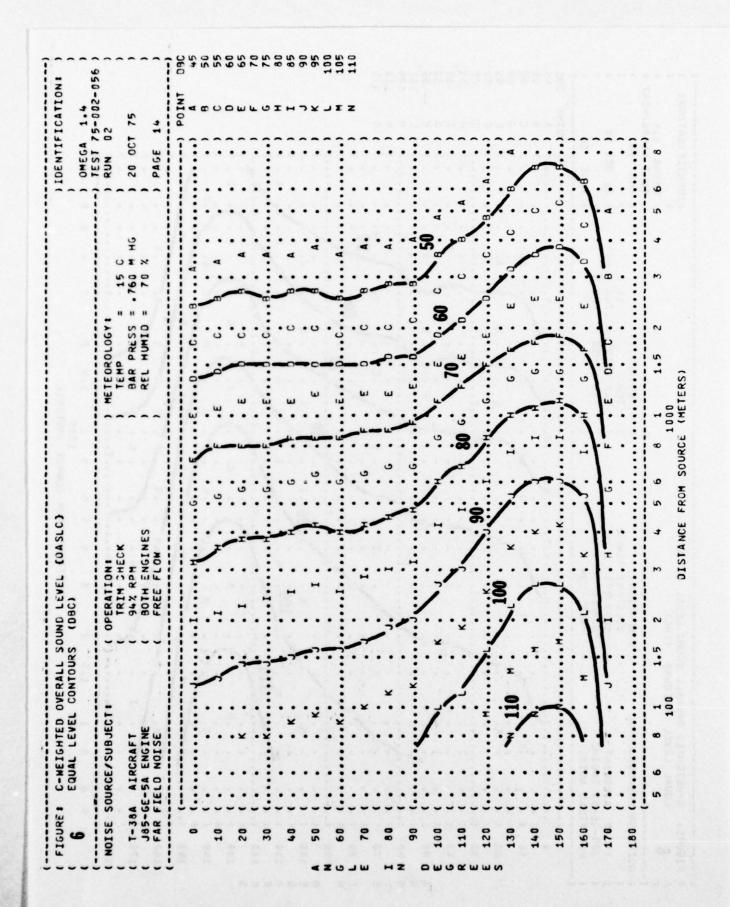


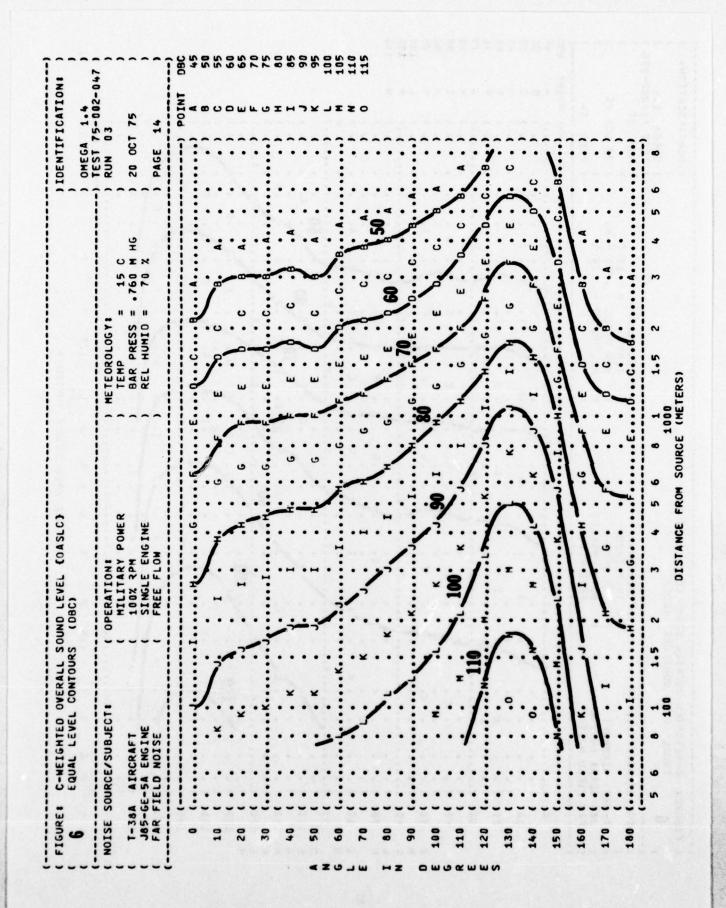


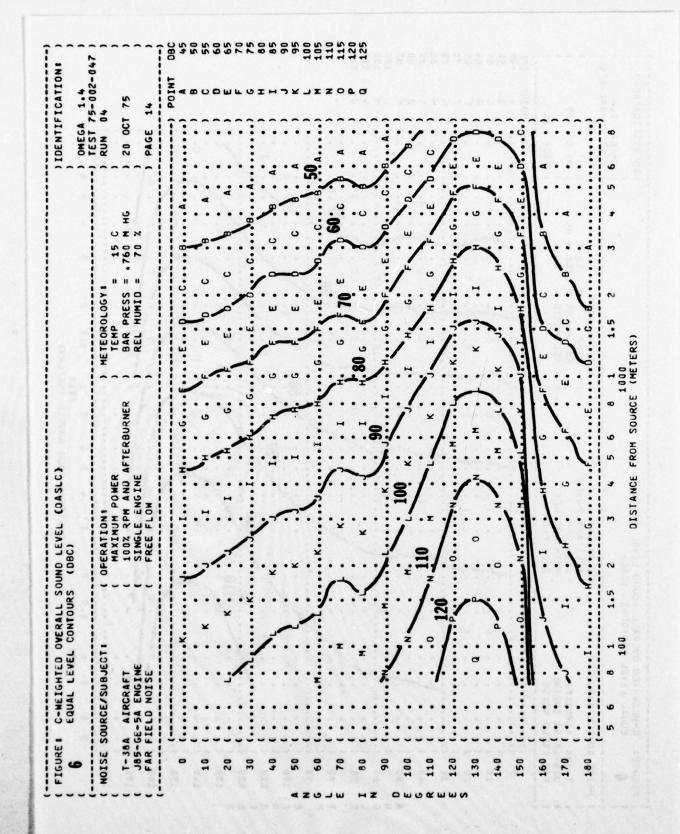


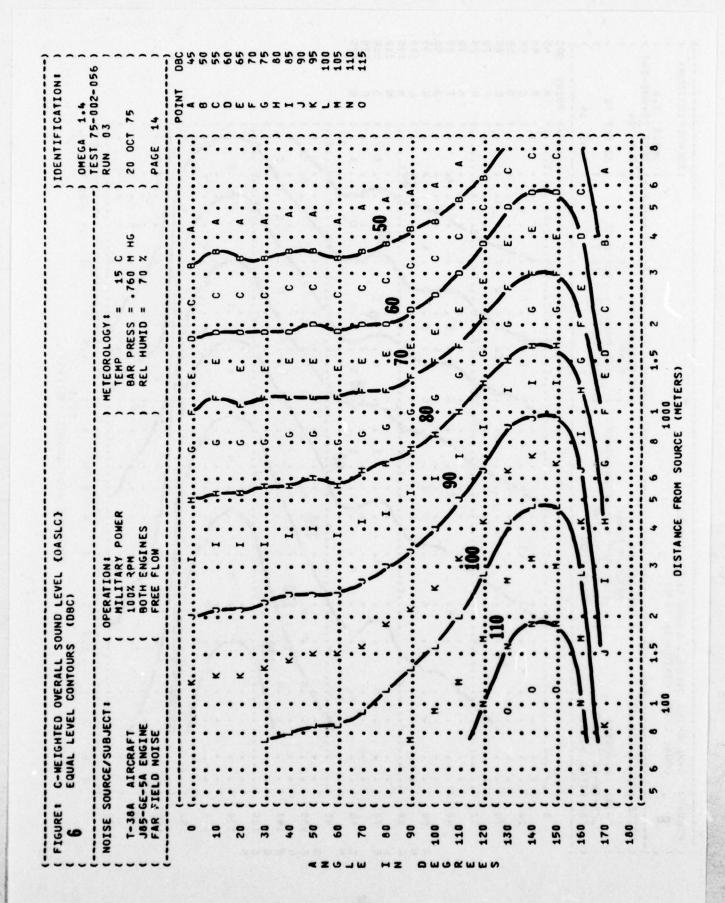


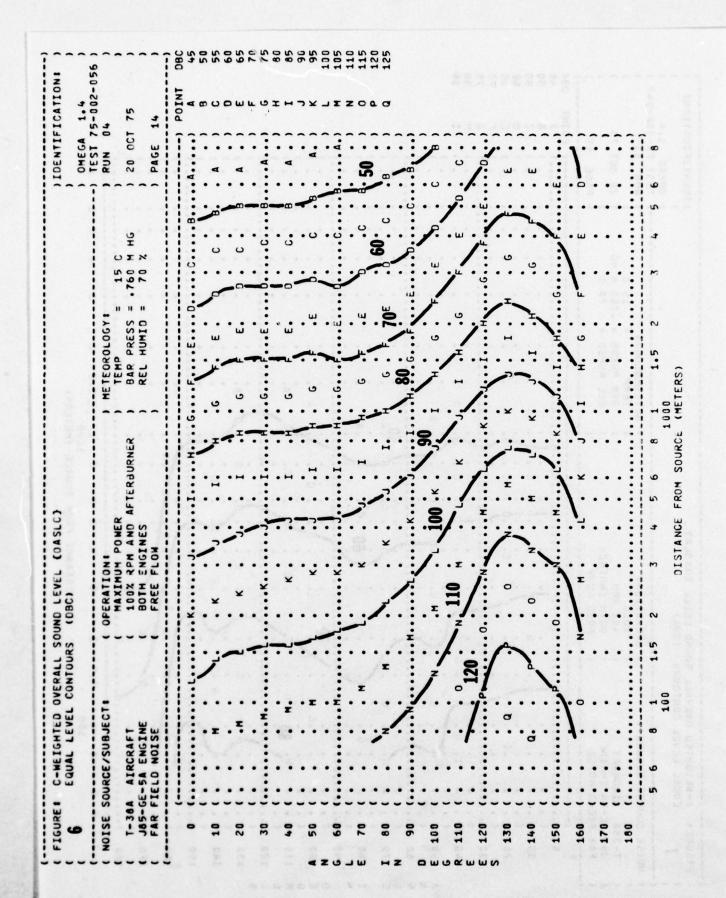


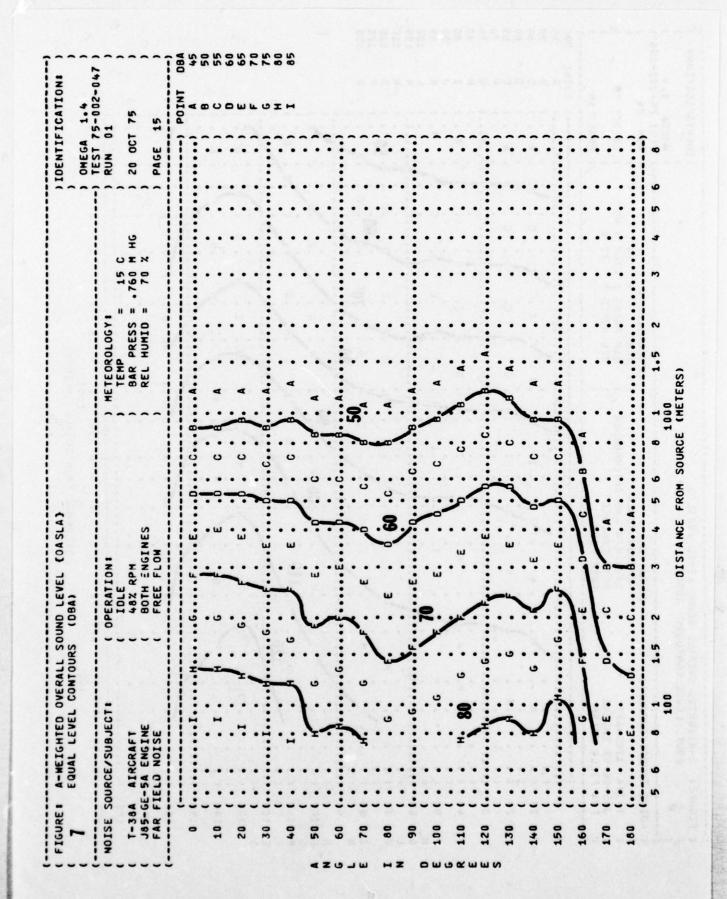




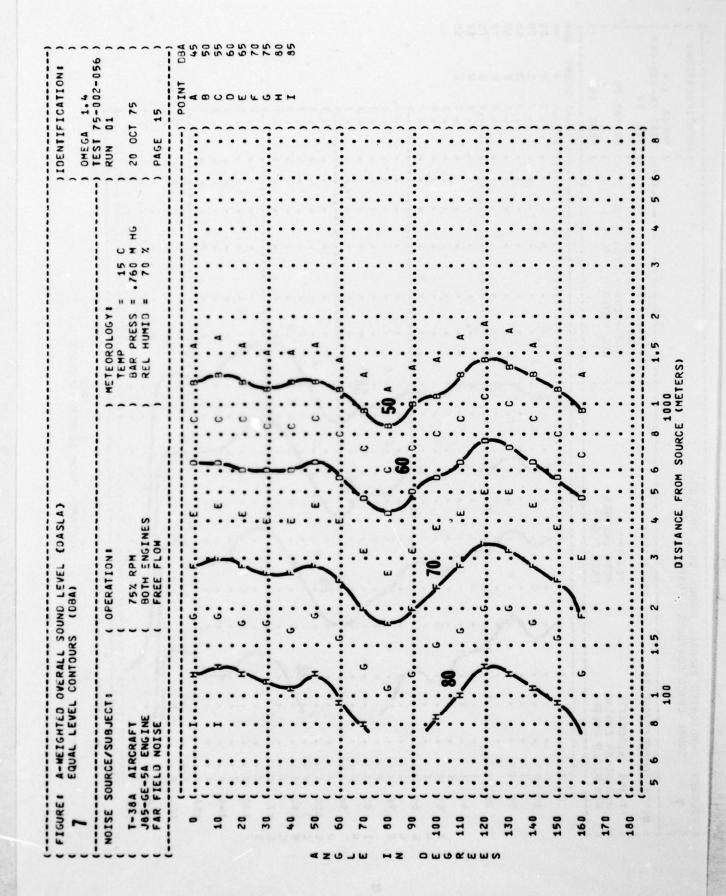


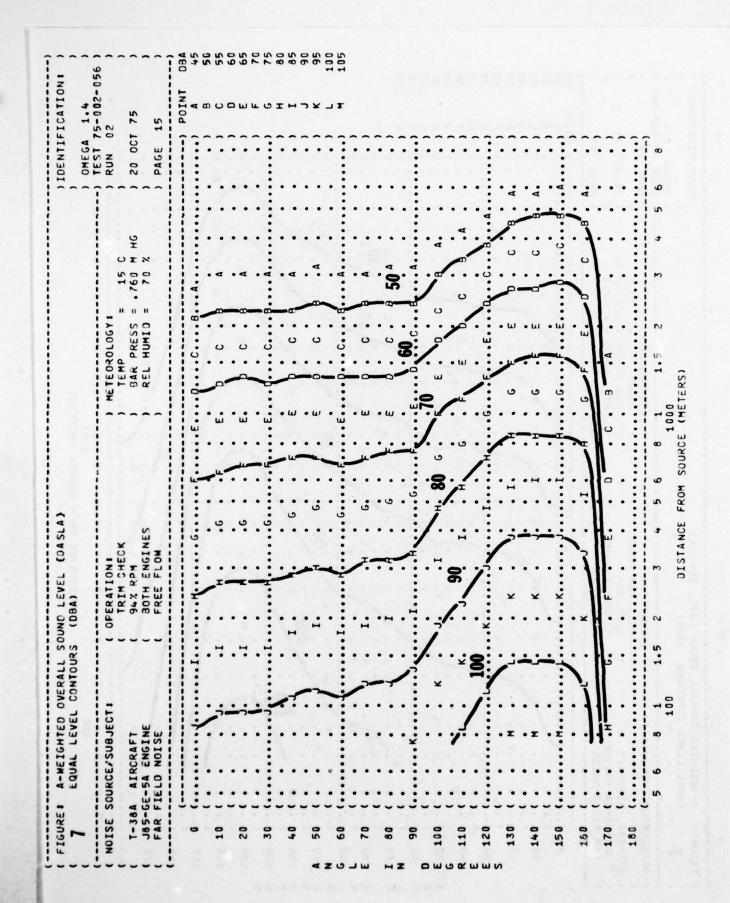


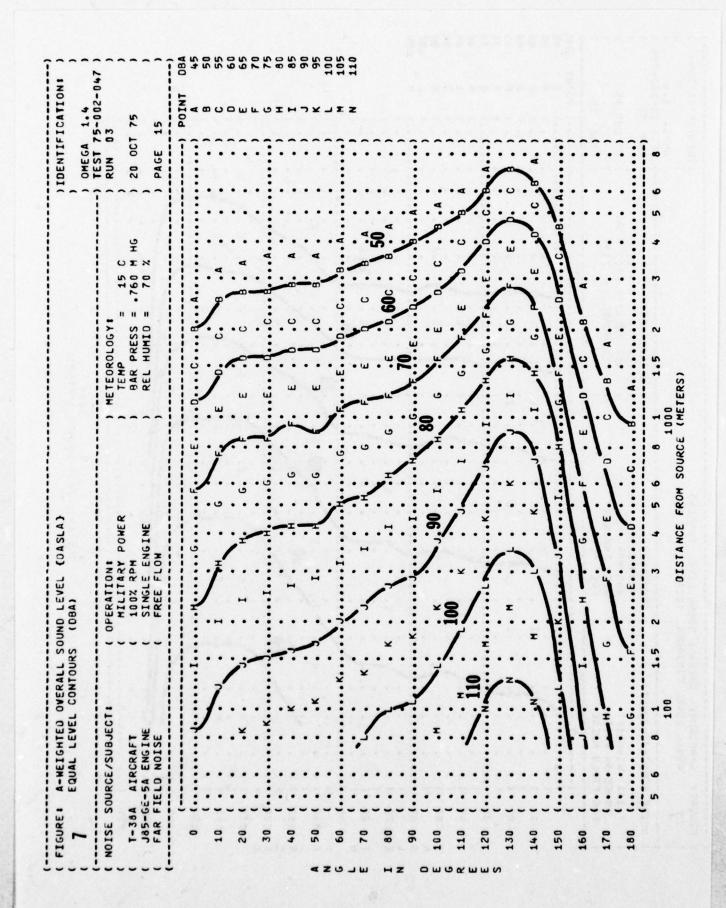


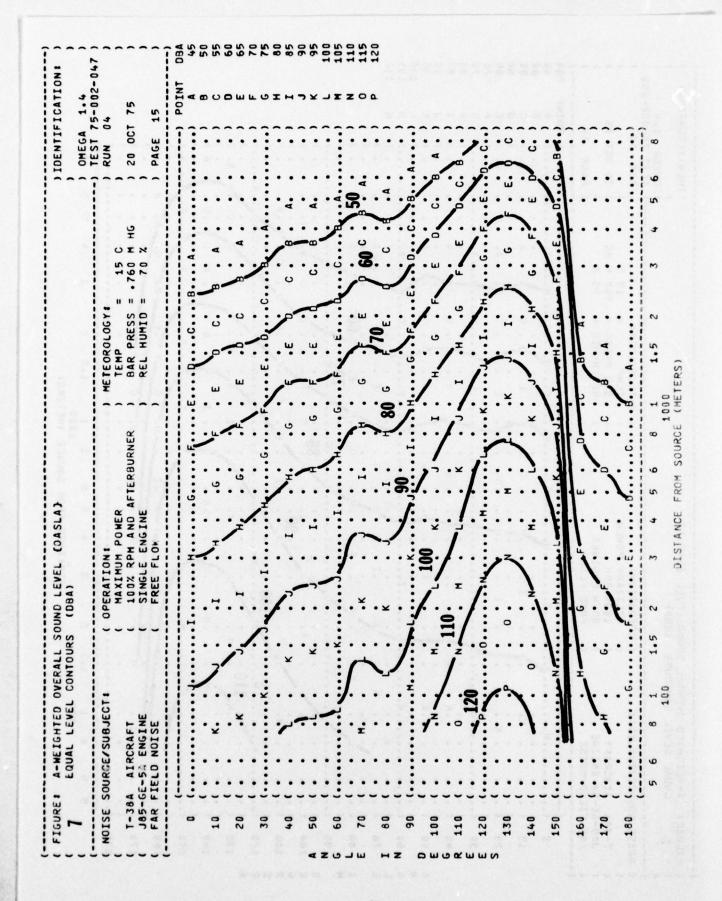


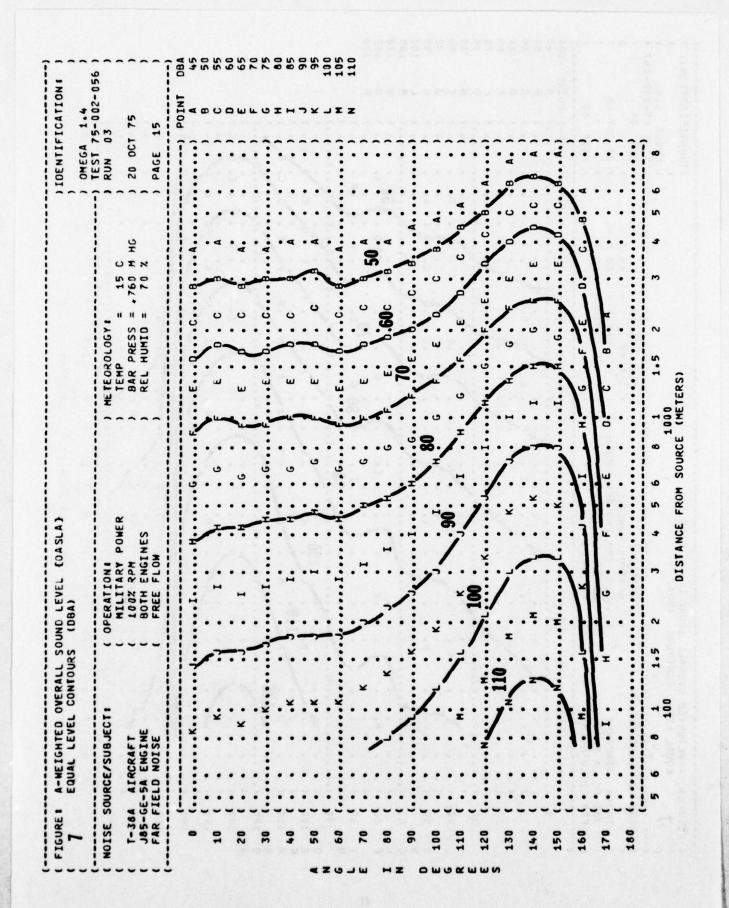
SOURCE/SUBJECT! (OPERATION! A RECRAFT TO S RAH TEMP TEMP TEMP TEMP TEMP TEMP TO S RAH	***************************************) OMEGA 1.4
39. AIRCRAFT S-G-5.5 ENGINE RELE FOUND REL HUNTO = 70 X HG 20 OCT 20	NOISE SOURCE/SUBJECT!	COPERATIONS	1) TEST 75-002-04
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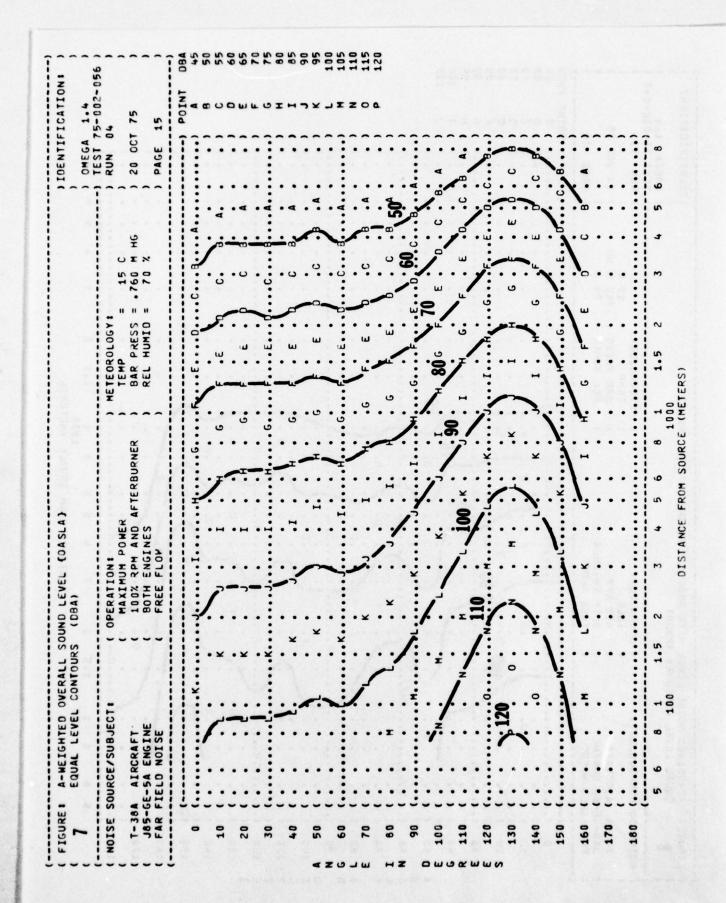


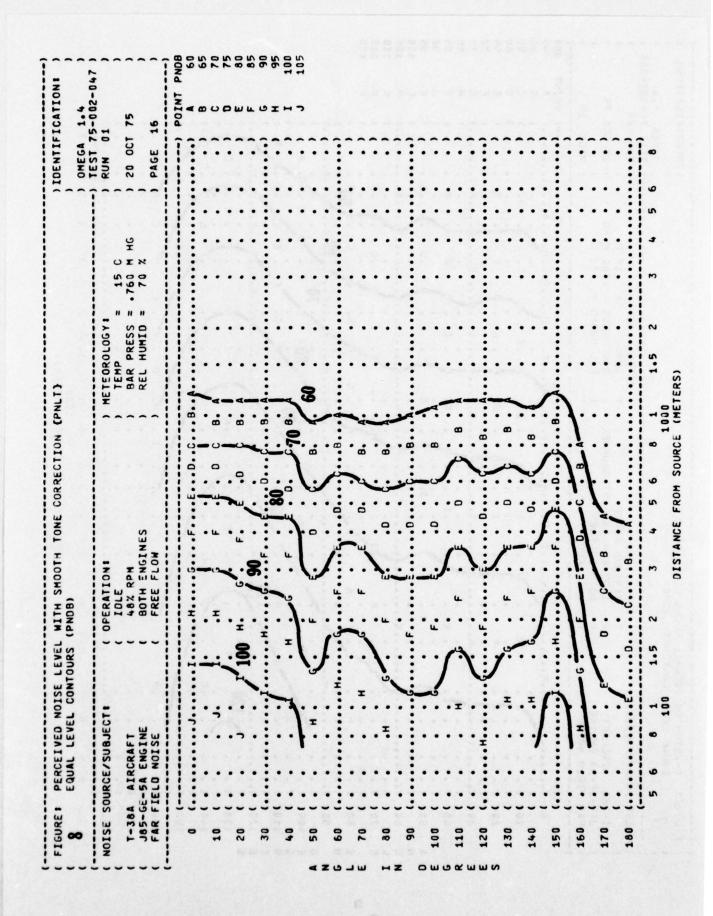


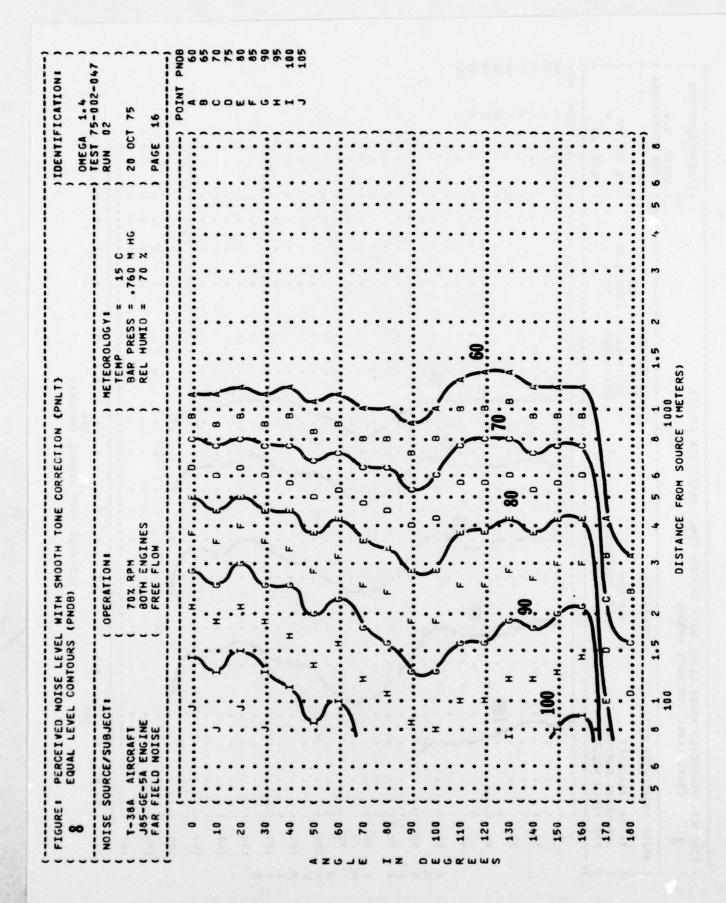


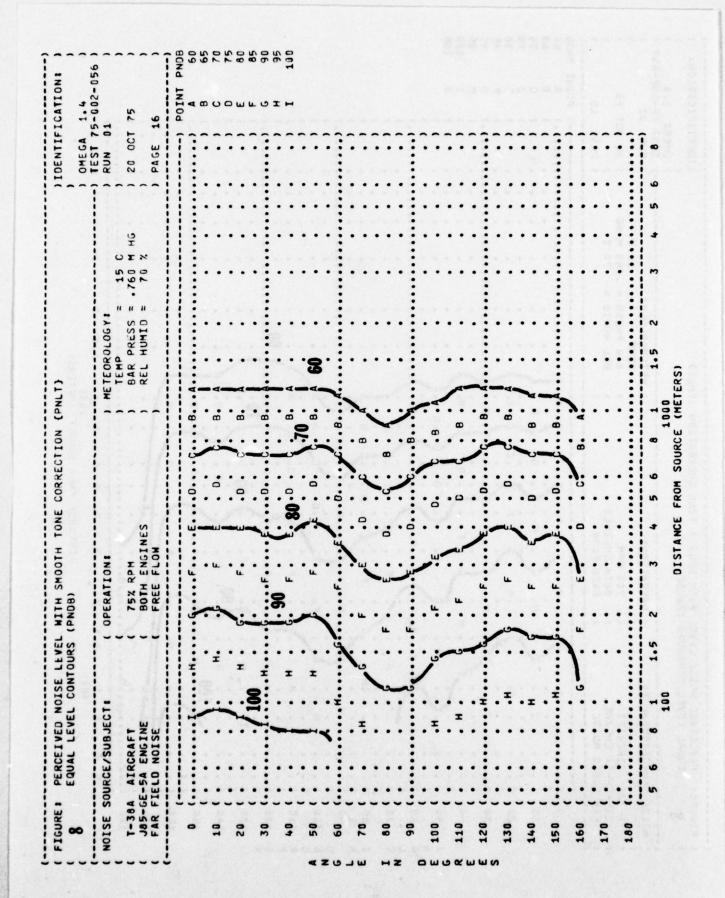


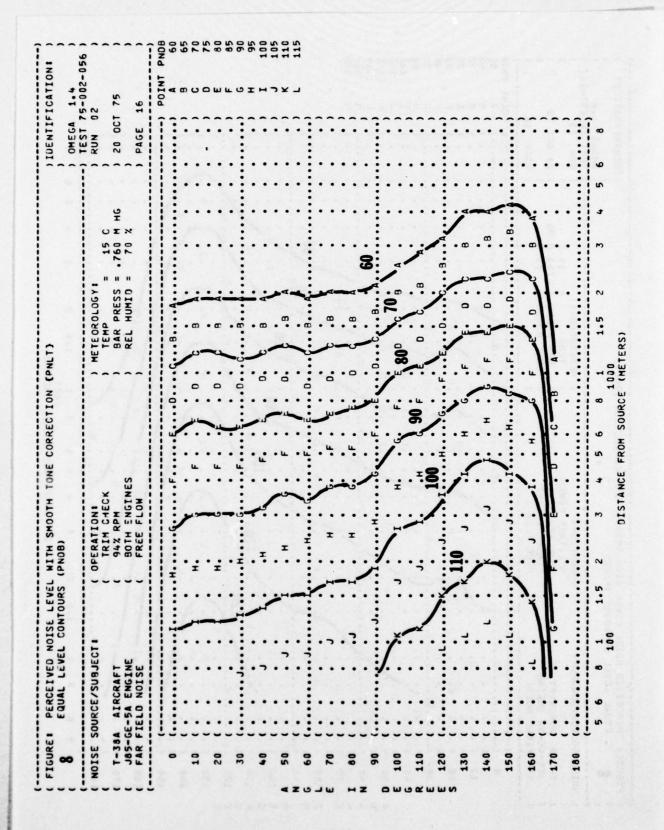


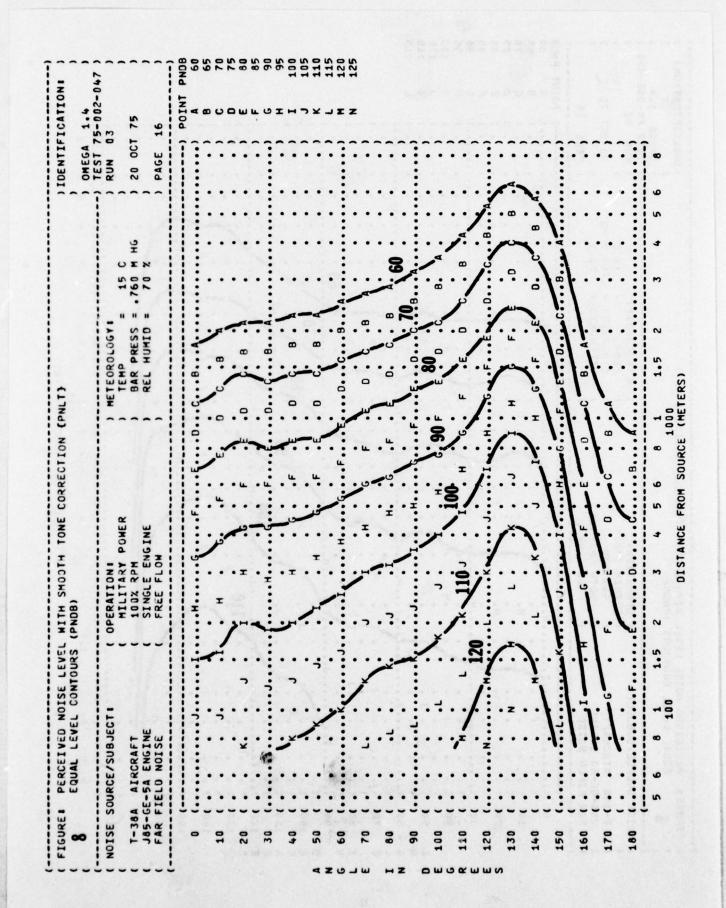


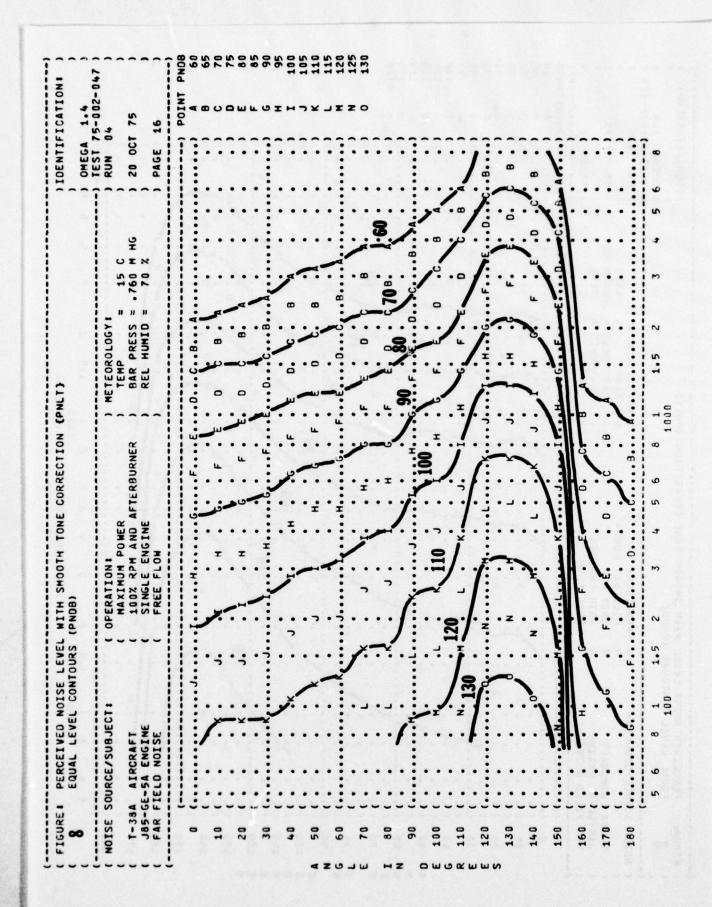


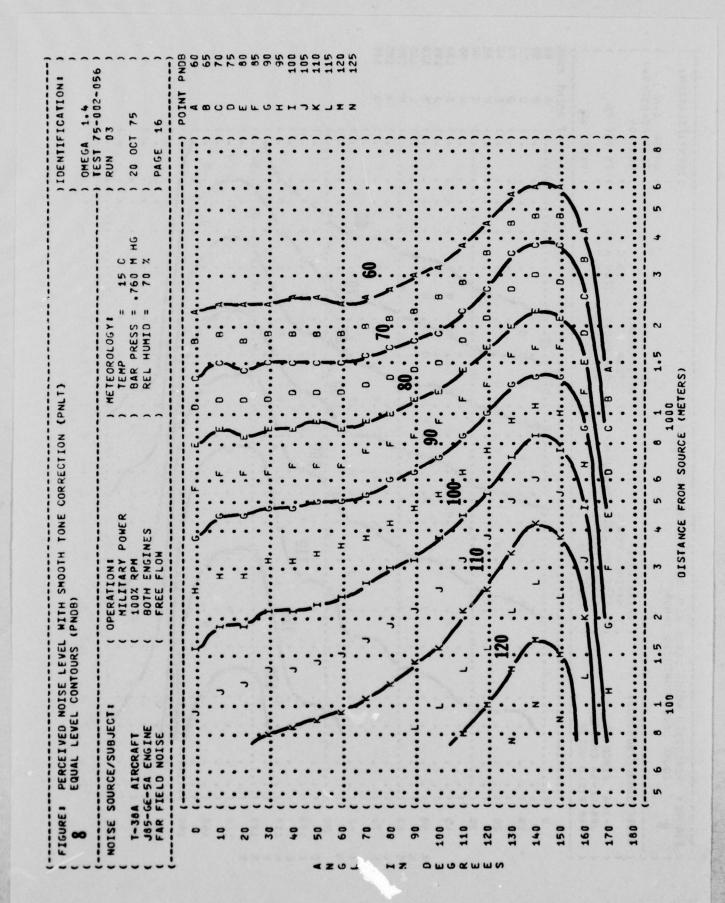


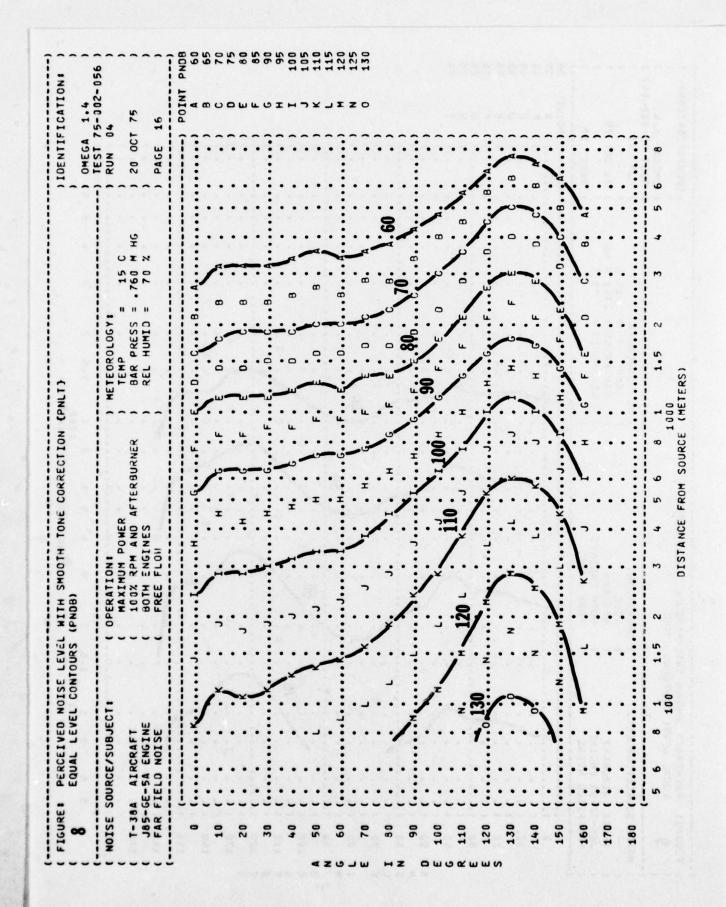


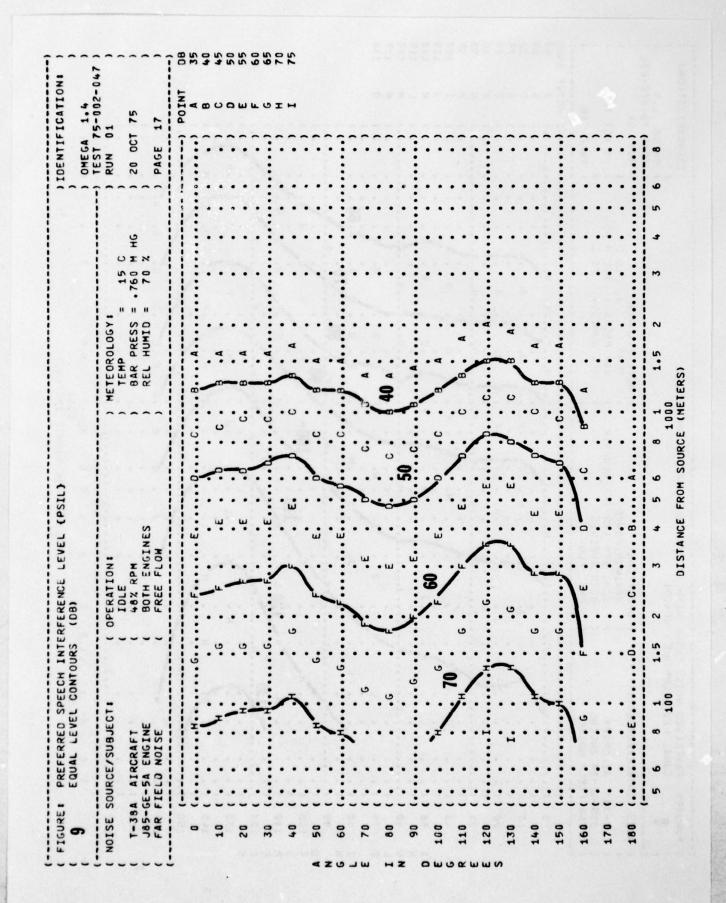




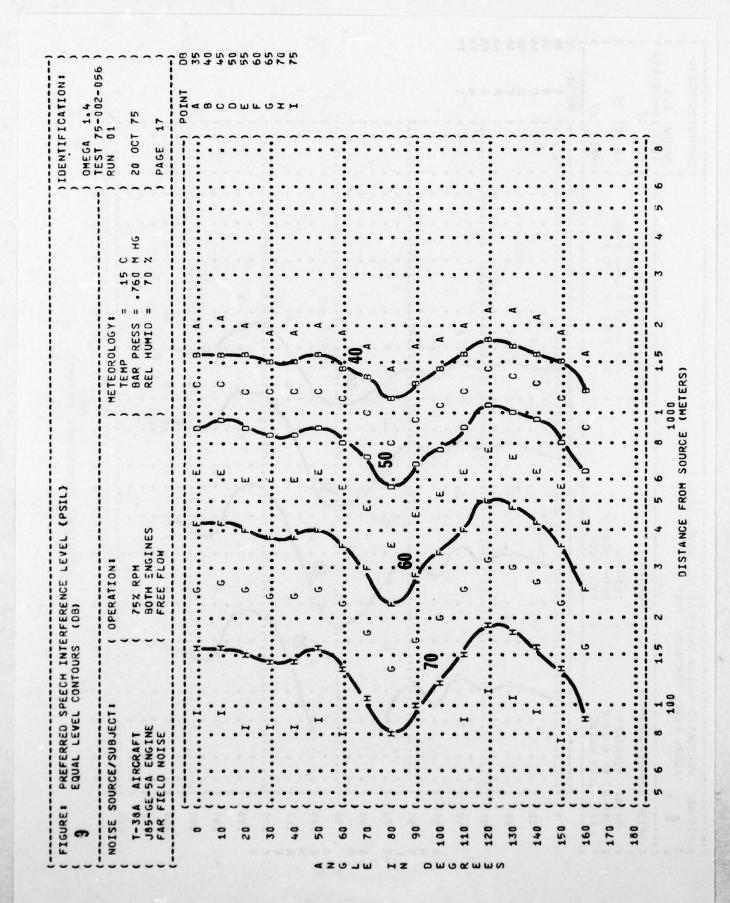


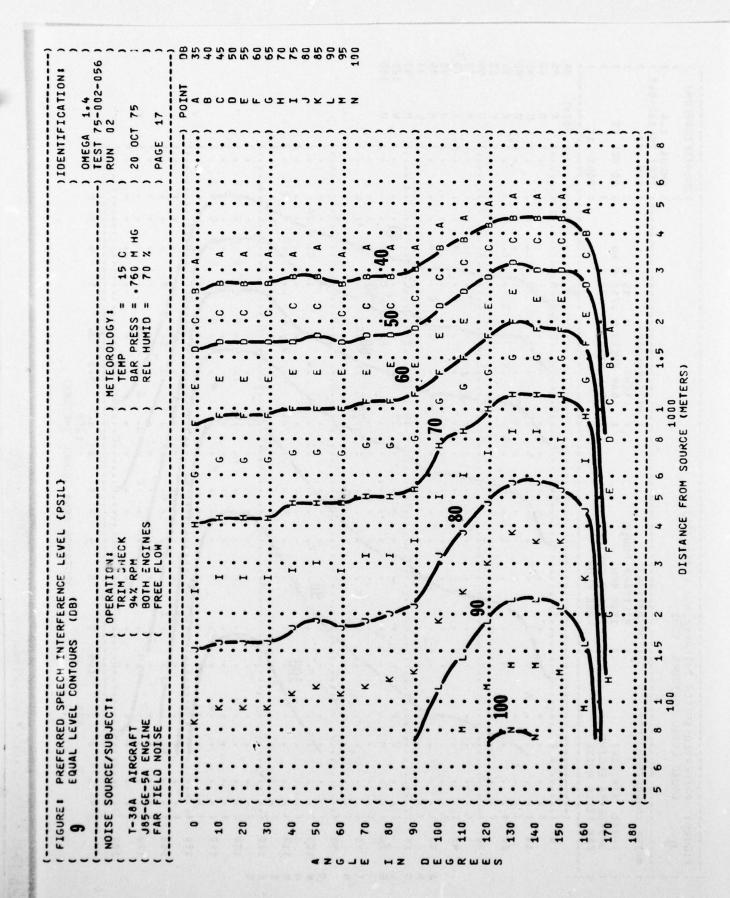


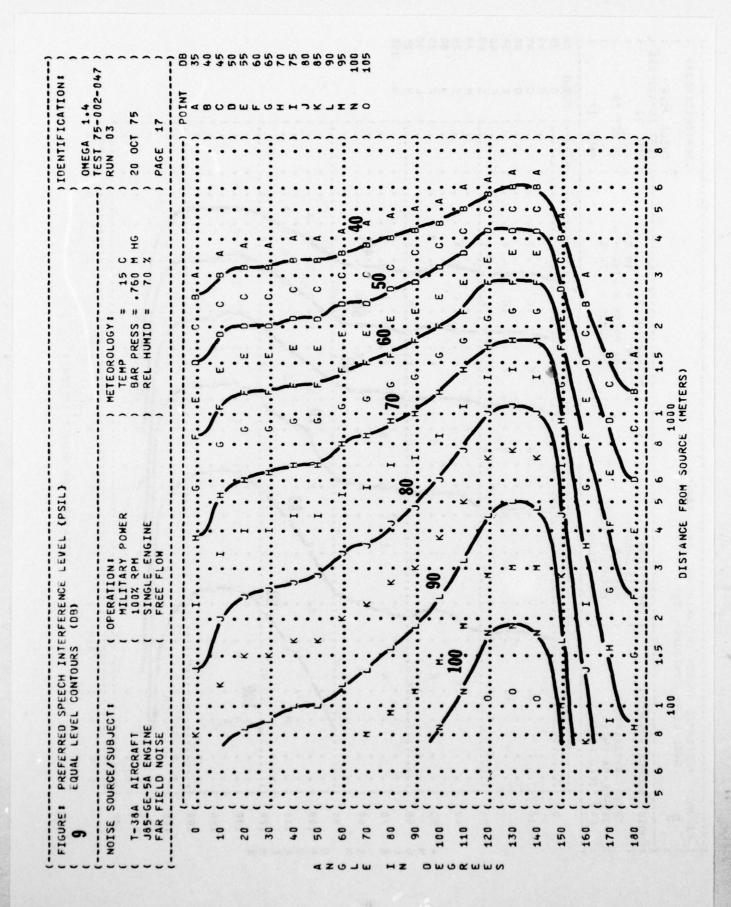


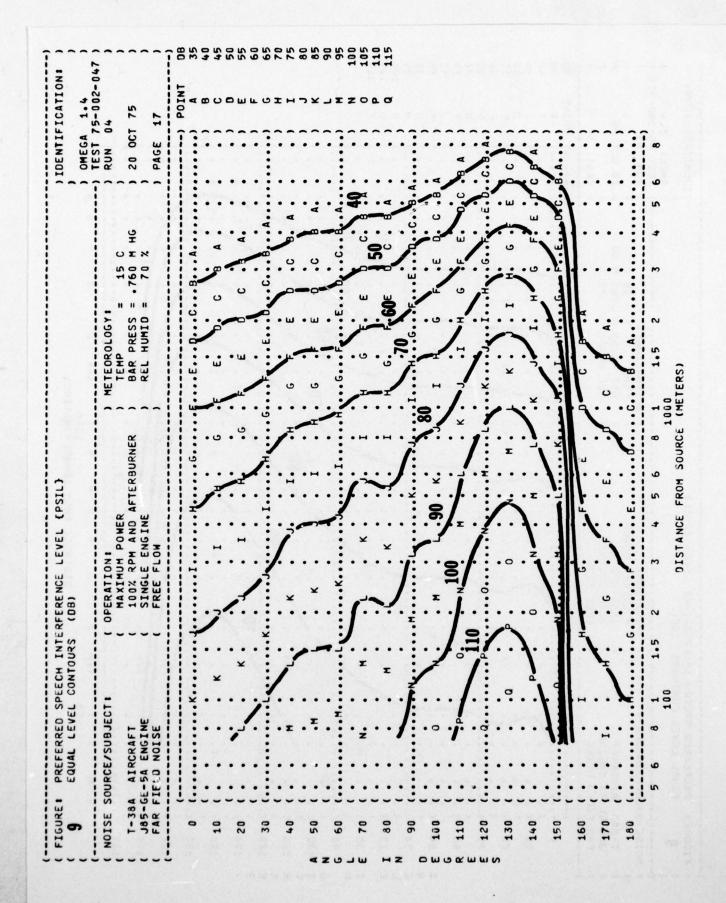


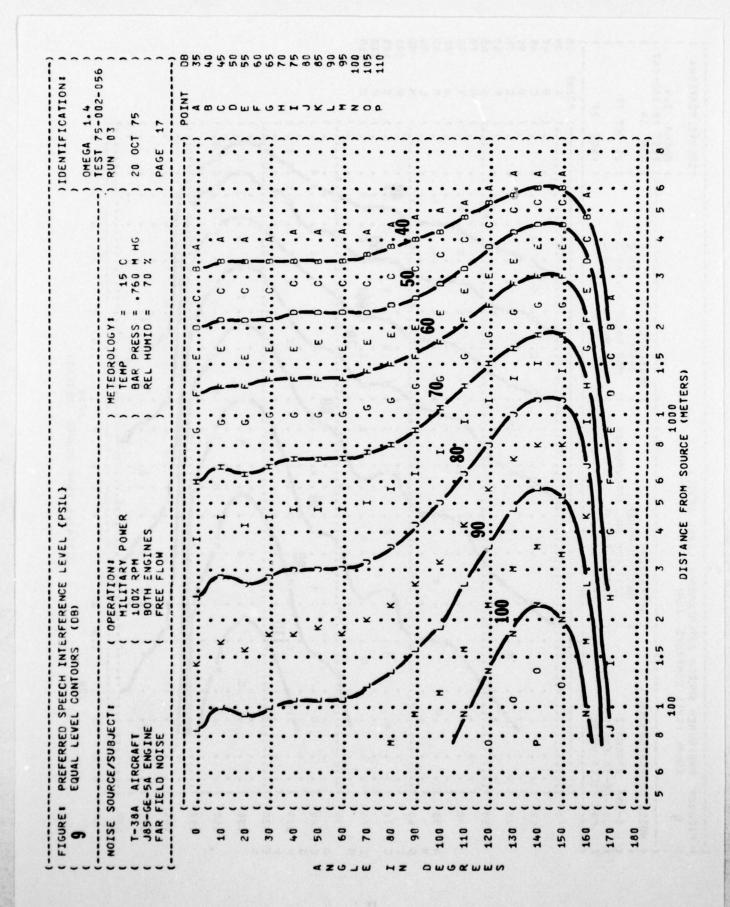
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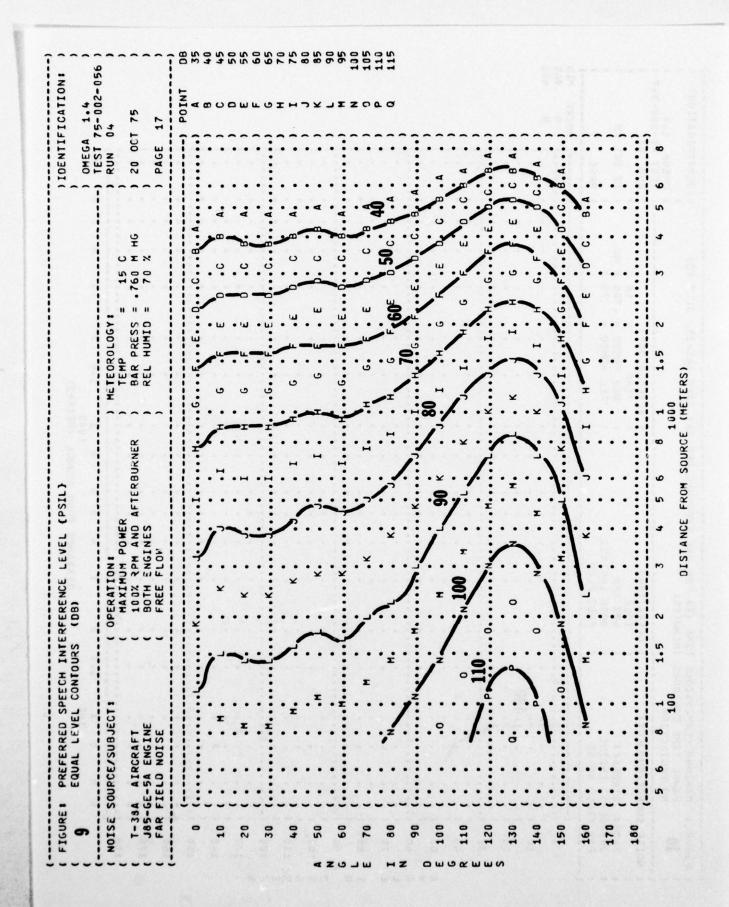












SOURCE/SUBJECT (OPERATION) HITEROROUGH 15 C		2	NO PROTECTION	ECTI	NO PROTECTION							-							1	77	OMEGA TEST 7	5A 1.4 F 75-002-047	-20
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TEMP	:
(48% RPH) BAR PRESS (BOTH ENGINES) REL HUMID (FREE FLOW	= 15 C) 20 OC = 760 M HG) 20 OC = 70 X) PAGE
PERSONNEL MAY BE EXPOSED UP TO 960 MINUTES PER DAY	
AT ALL DISTANCES FROM SOURCE EQUAL TO OR GREATER THAN	75 METERS
FOR ALL ANGLES EVALUATED (INDICATED BY < AT LEFT)	
UNDER THE FOLLOWING EAR PROTECTION CONDITIONS:	
MINIMUM QPL EAR MUFFS	
AMERICAN OPTICAL 1700 EAR MUFFS	
V-51R EAR PLUGS	
COMFIT TRIPLE FLANGE EAR PLUGS	
H-133 GROUND COMMUNICATION UNIT	
	20 day
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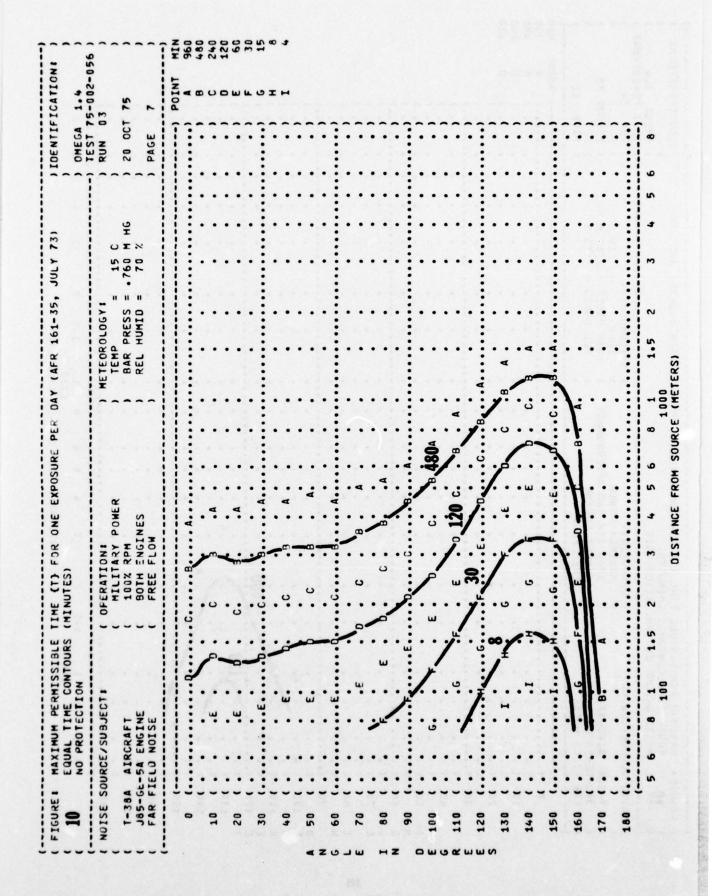
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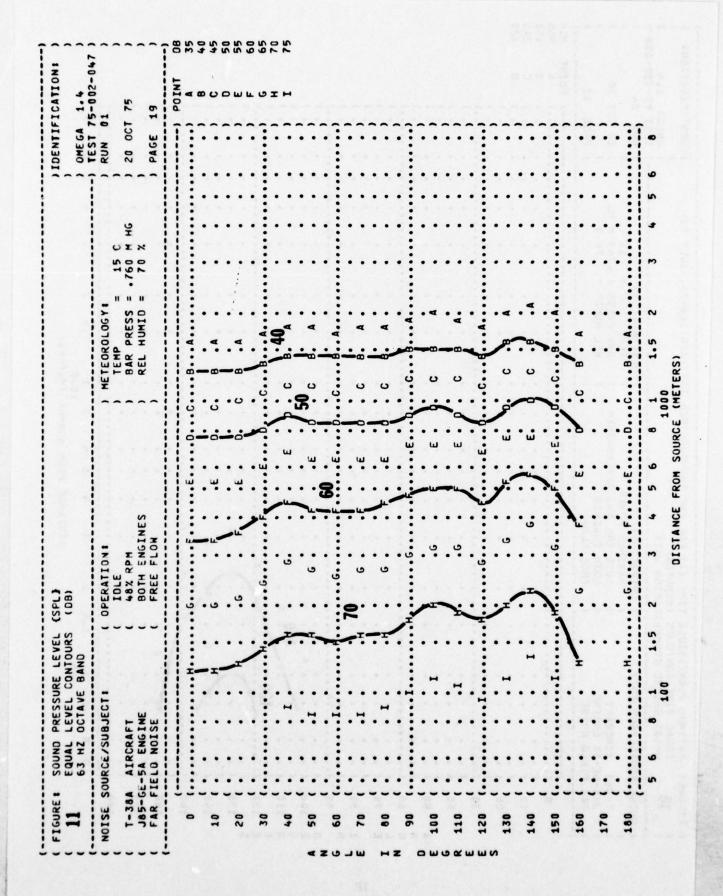
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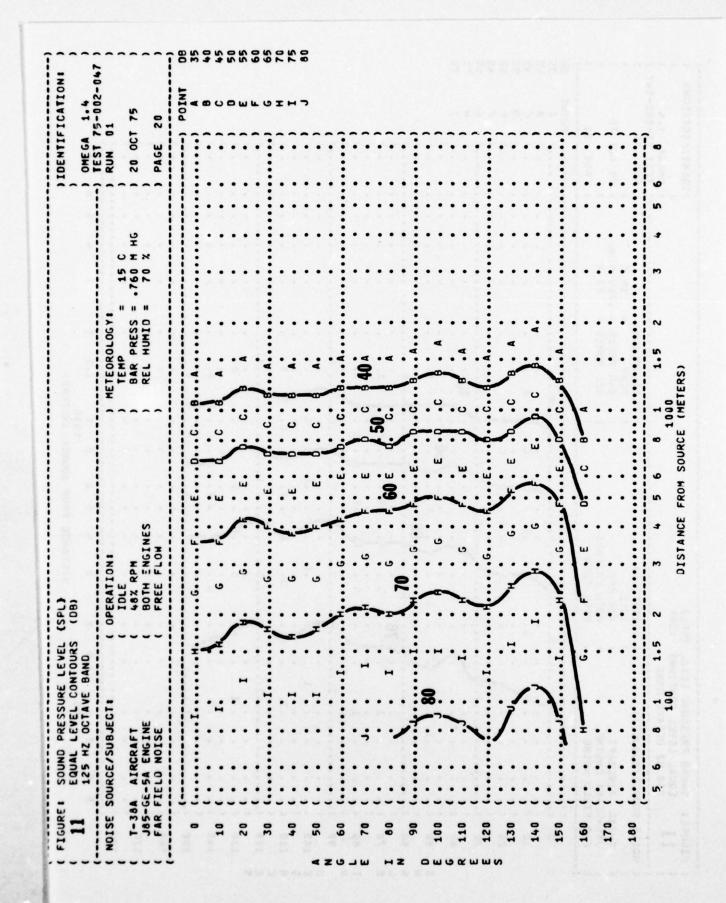
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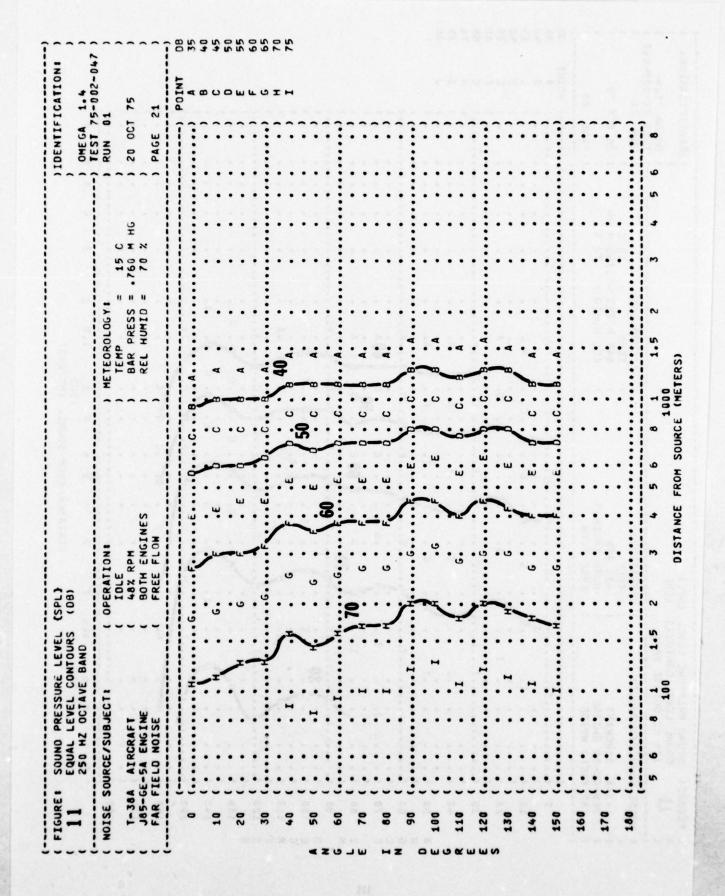
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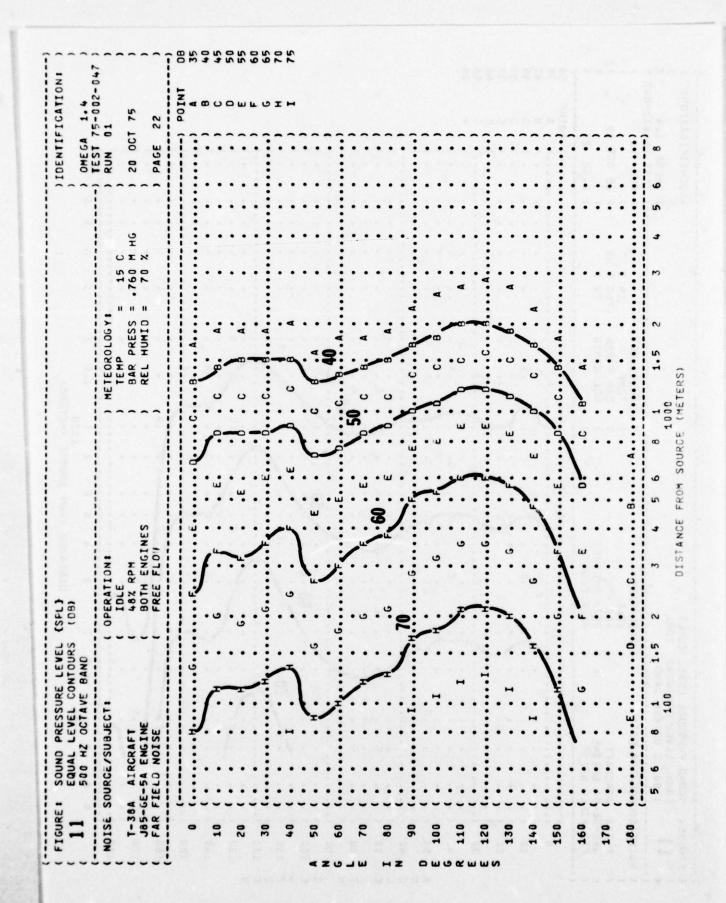
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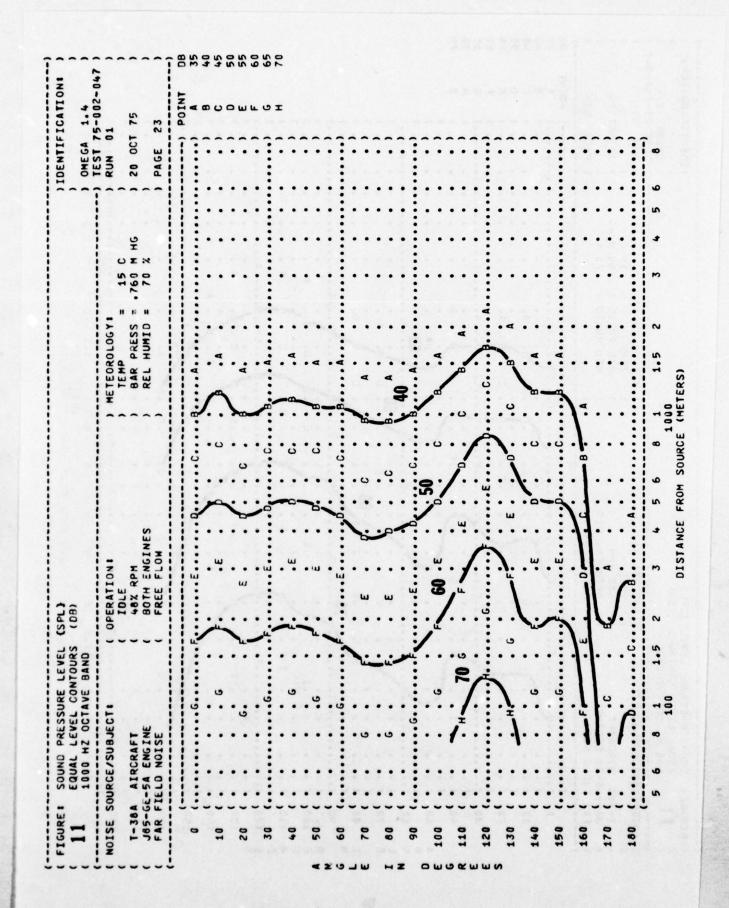
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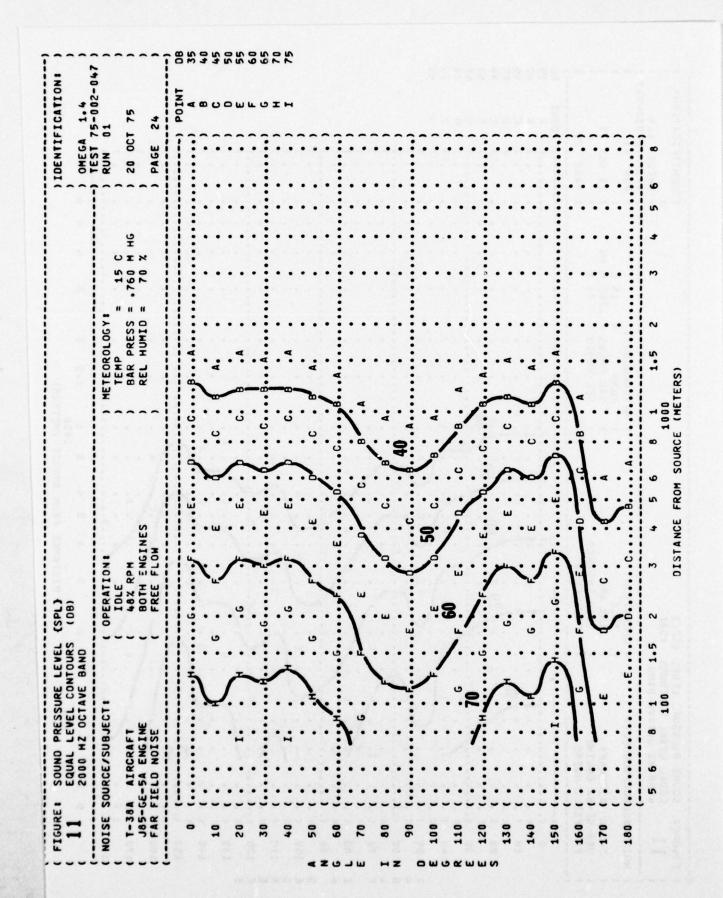


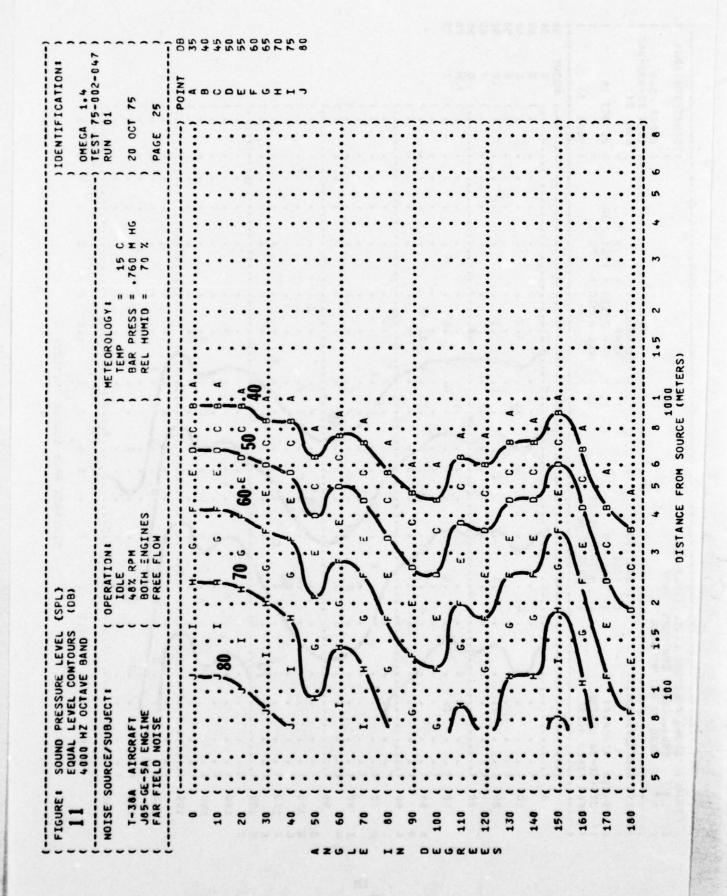




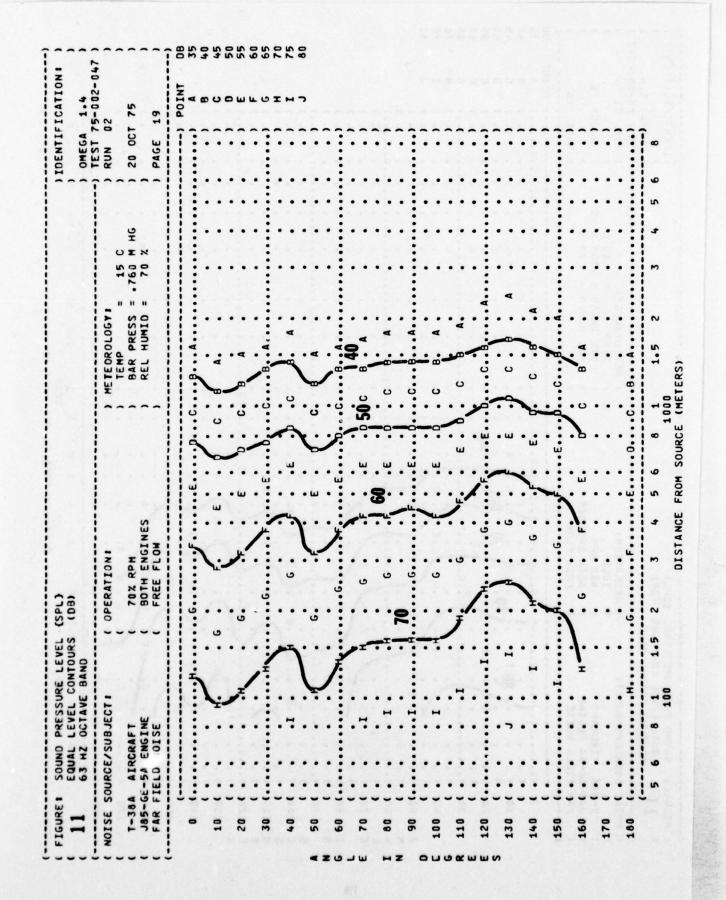


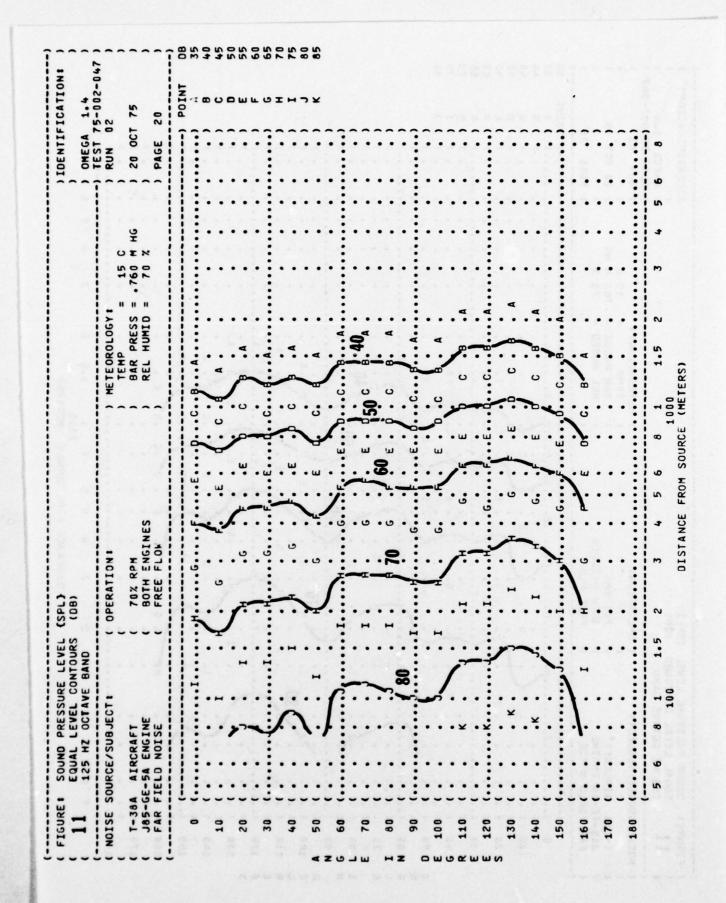


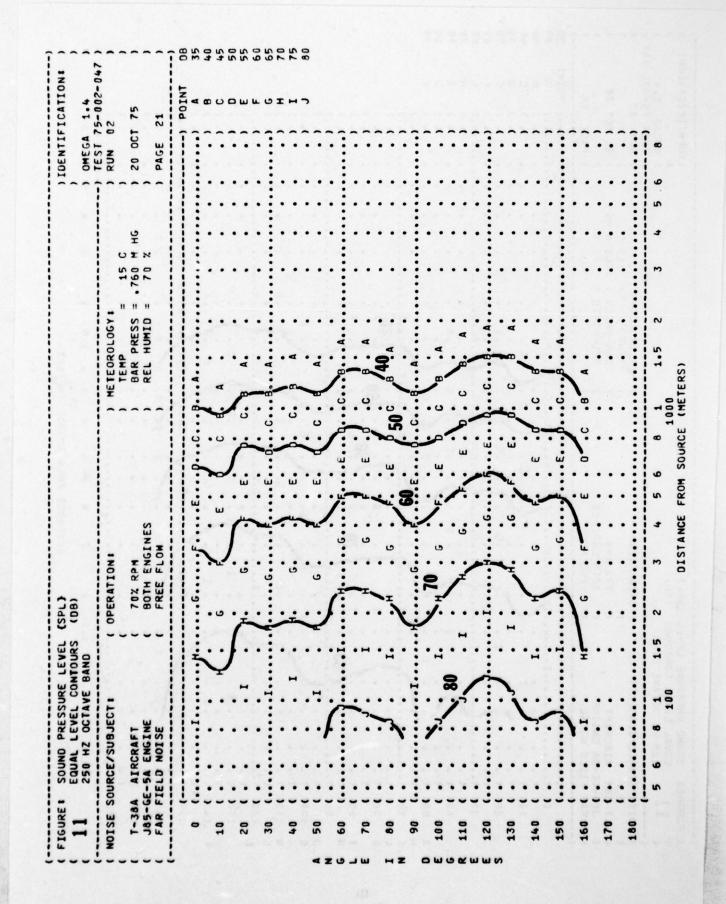


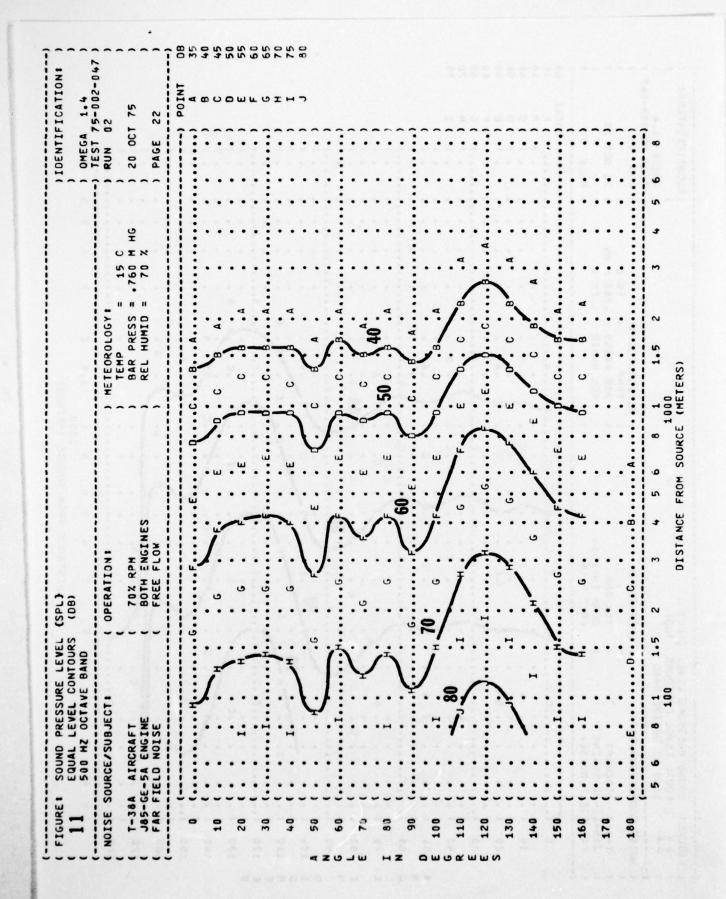


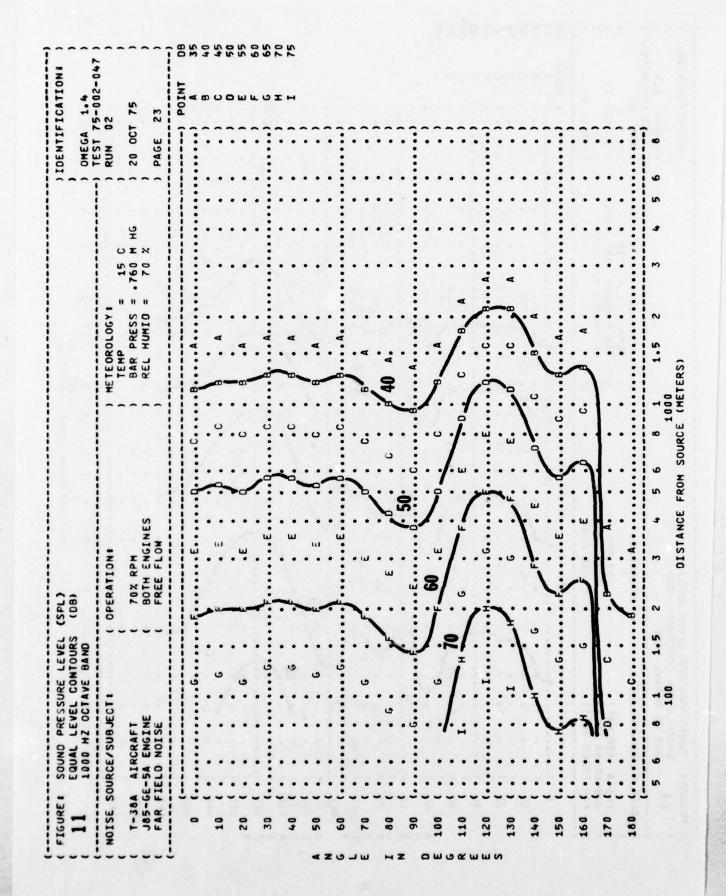
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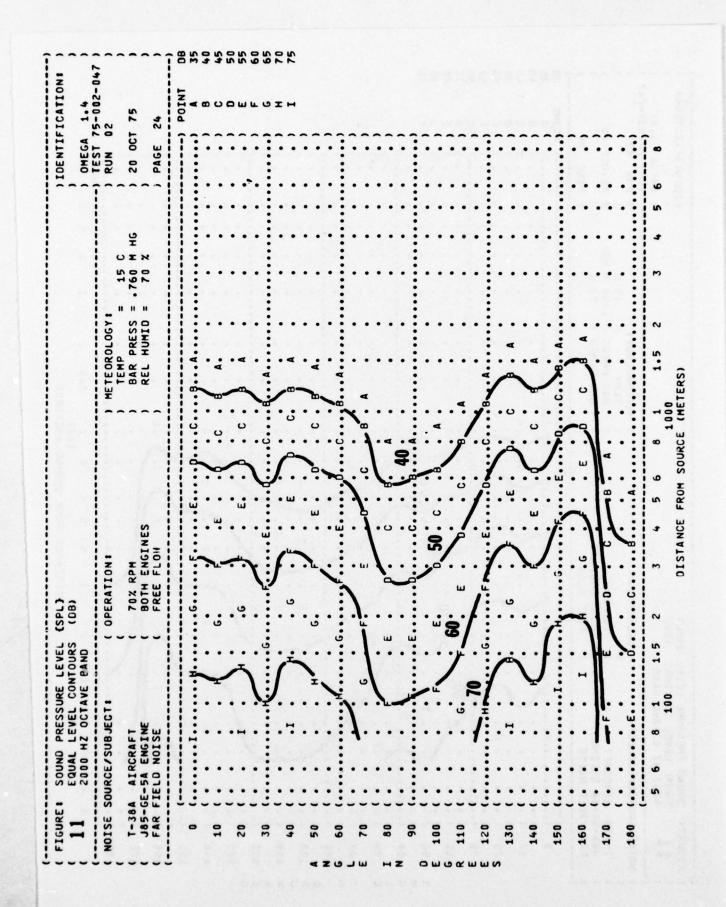




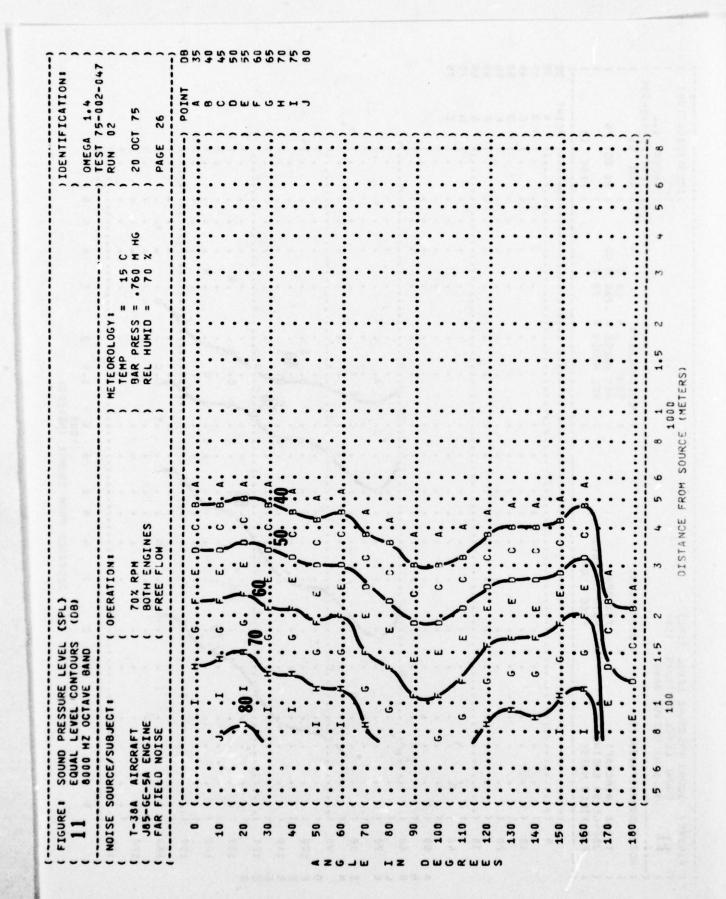




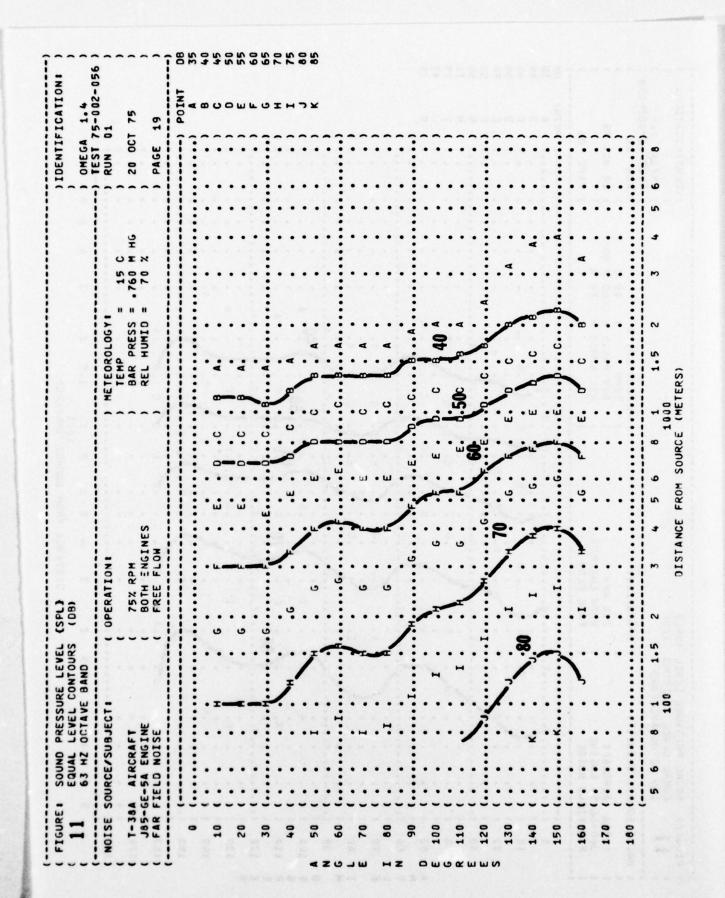


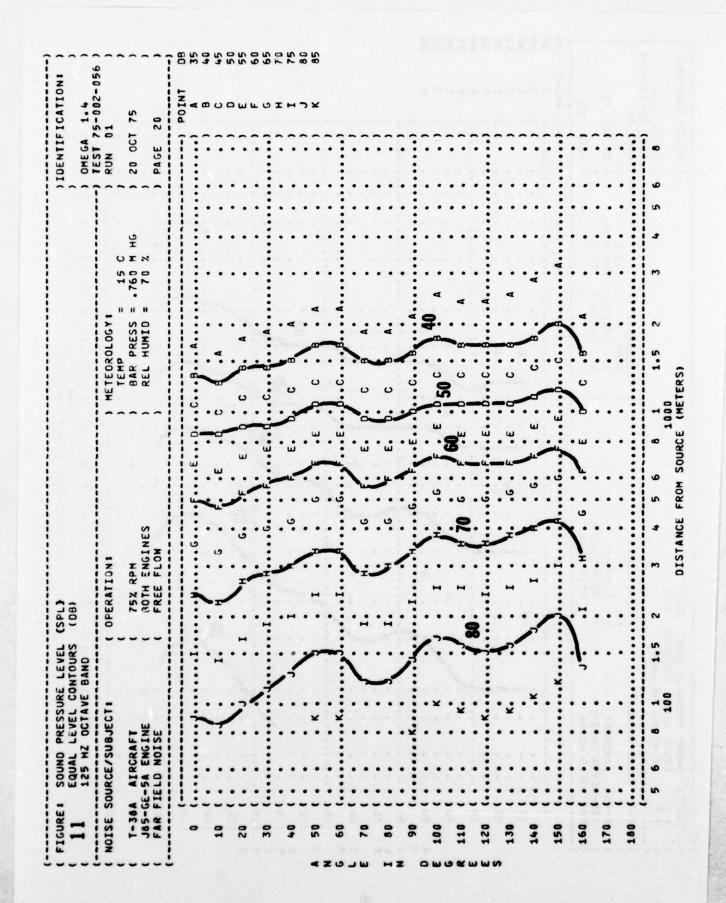


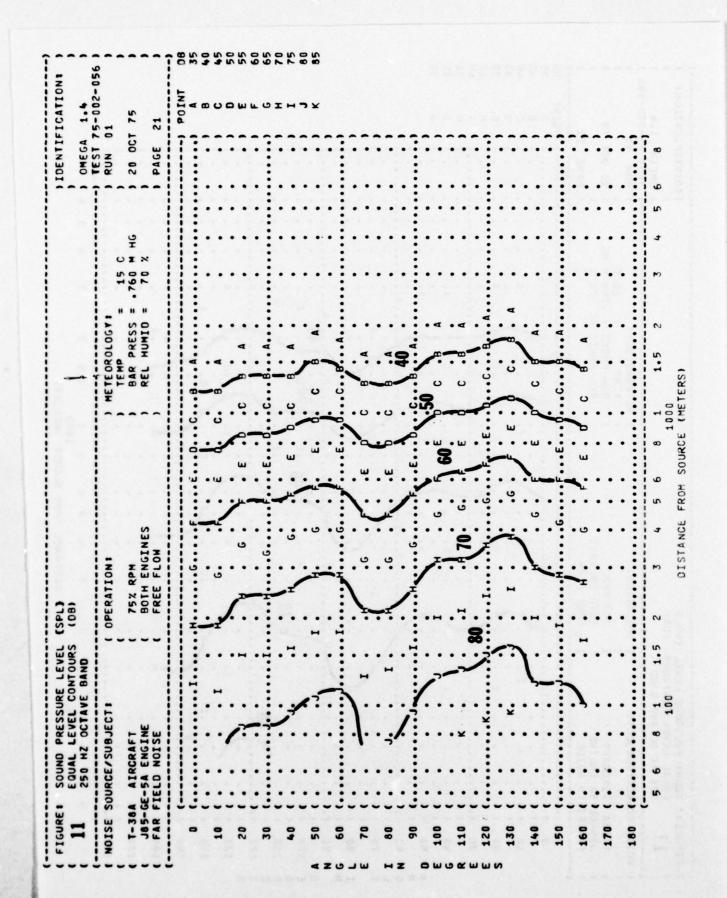
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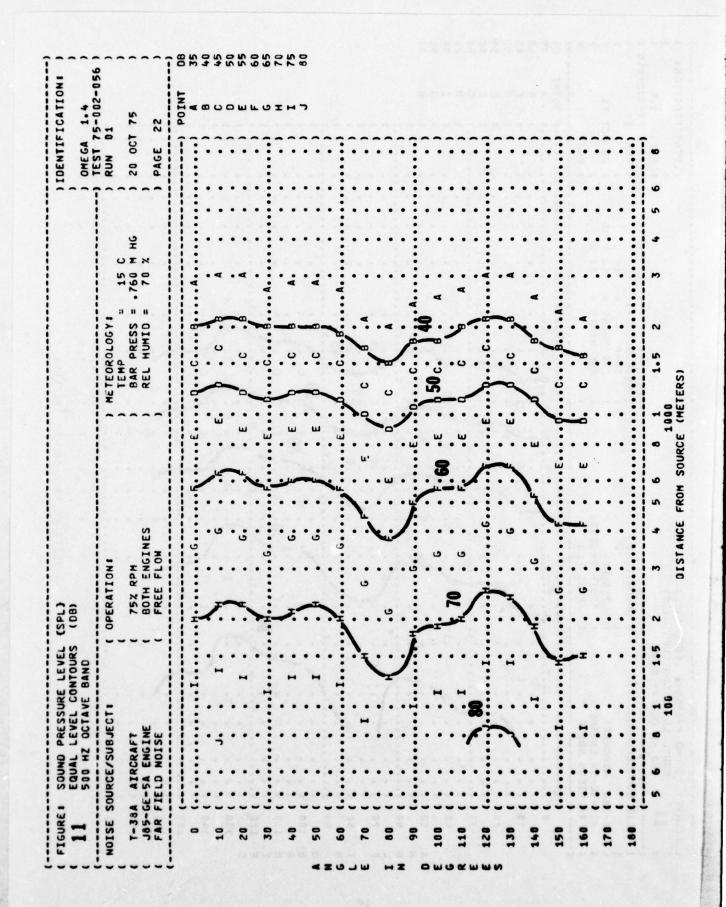


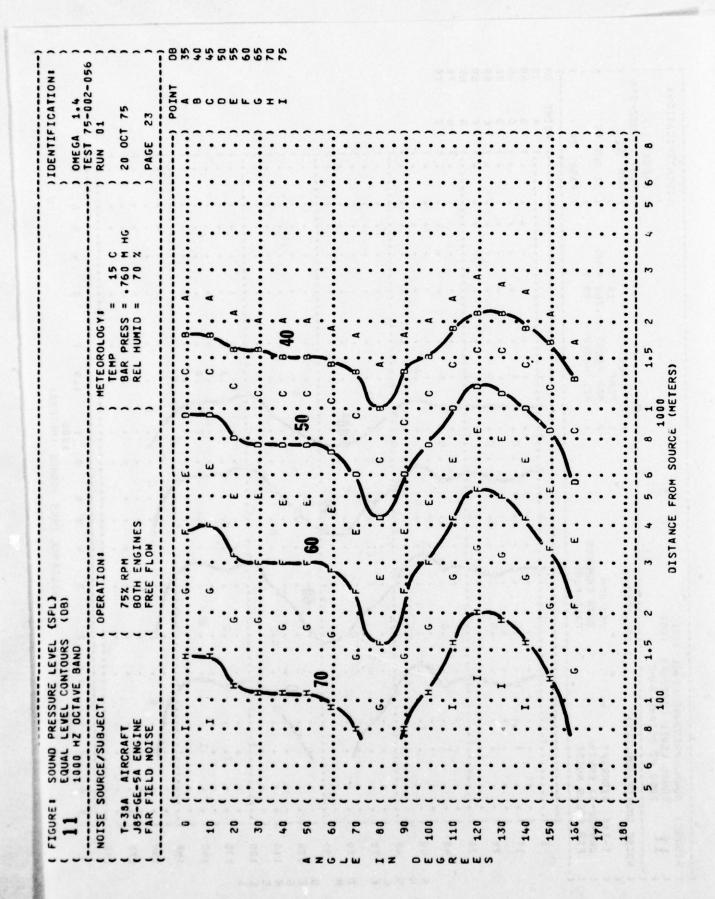
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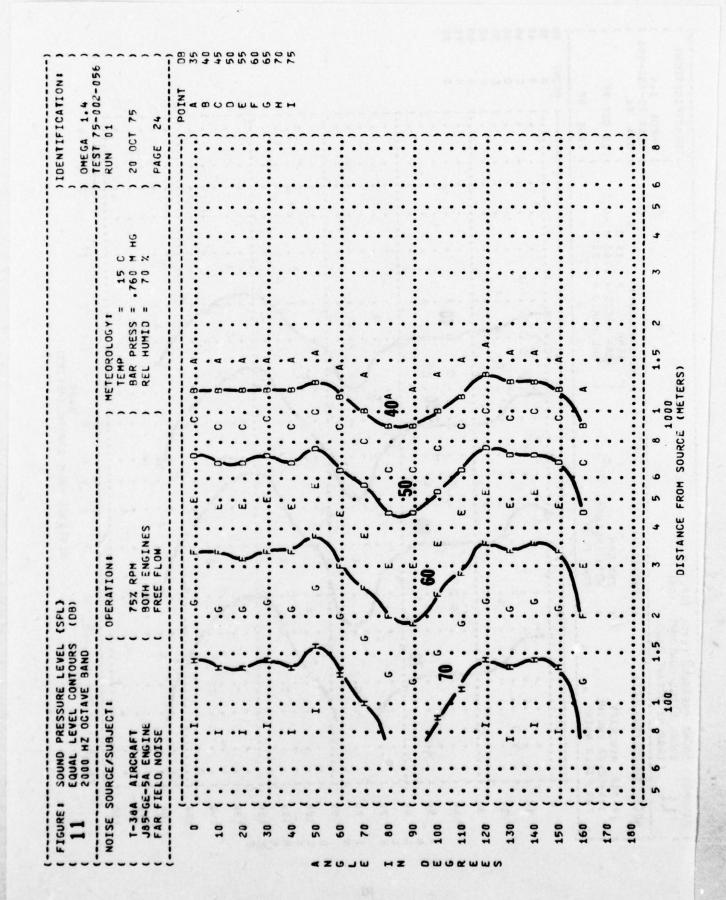


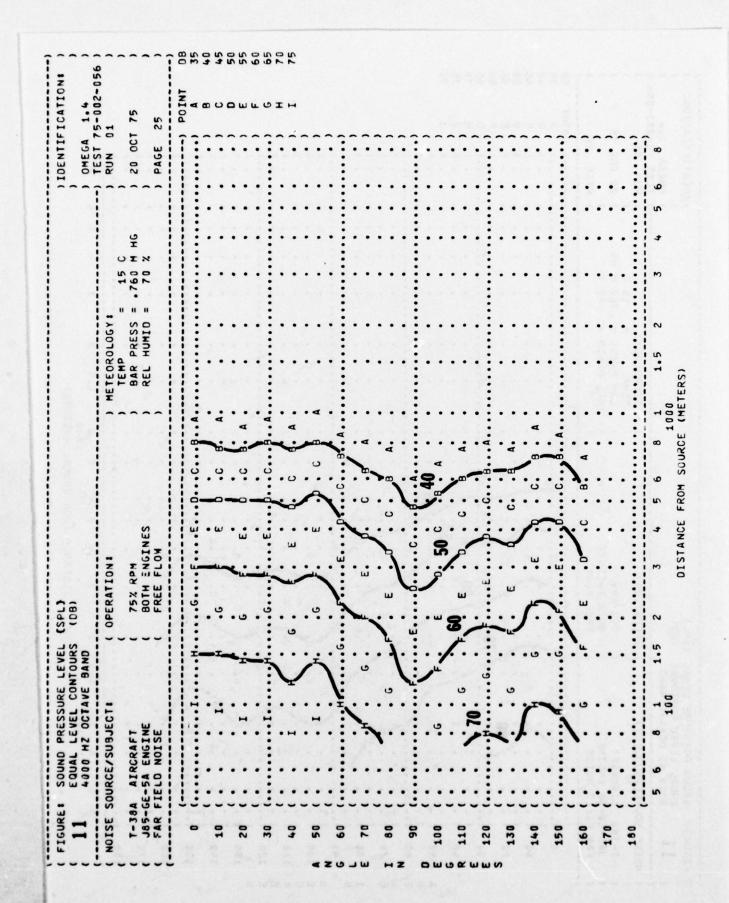




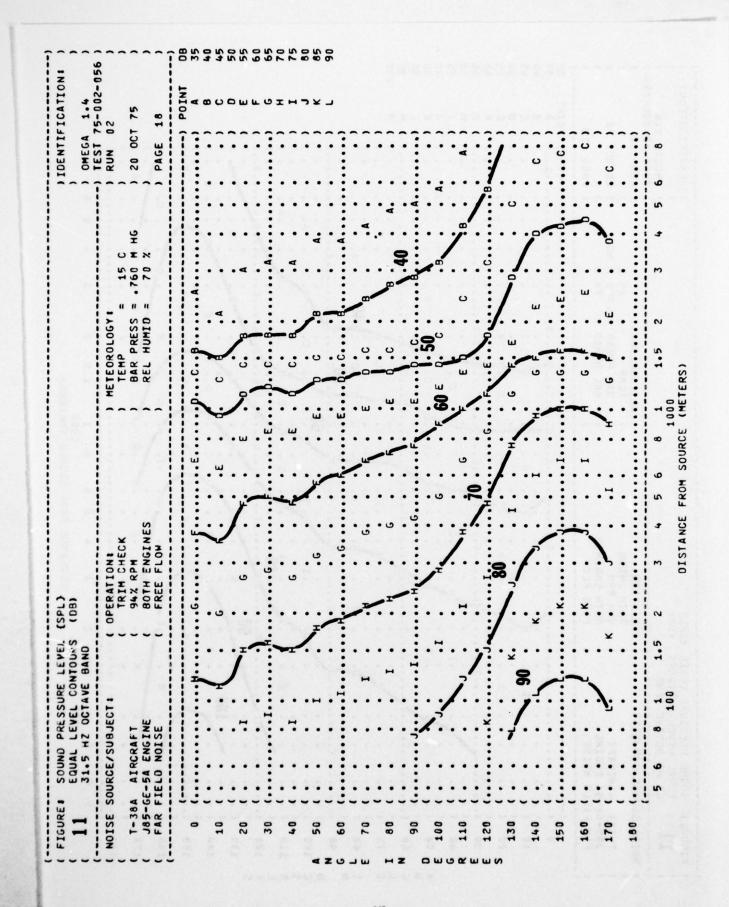


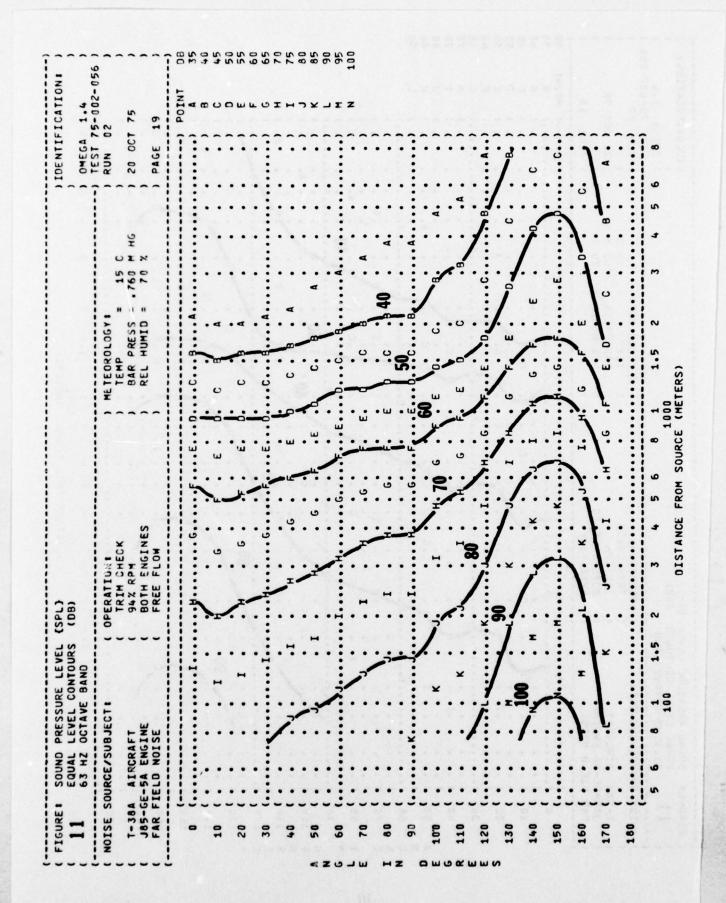


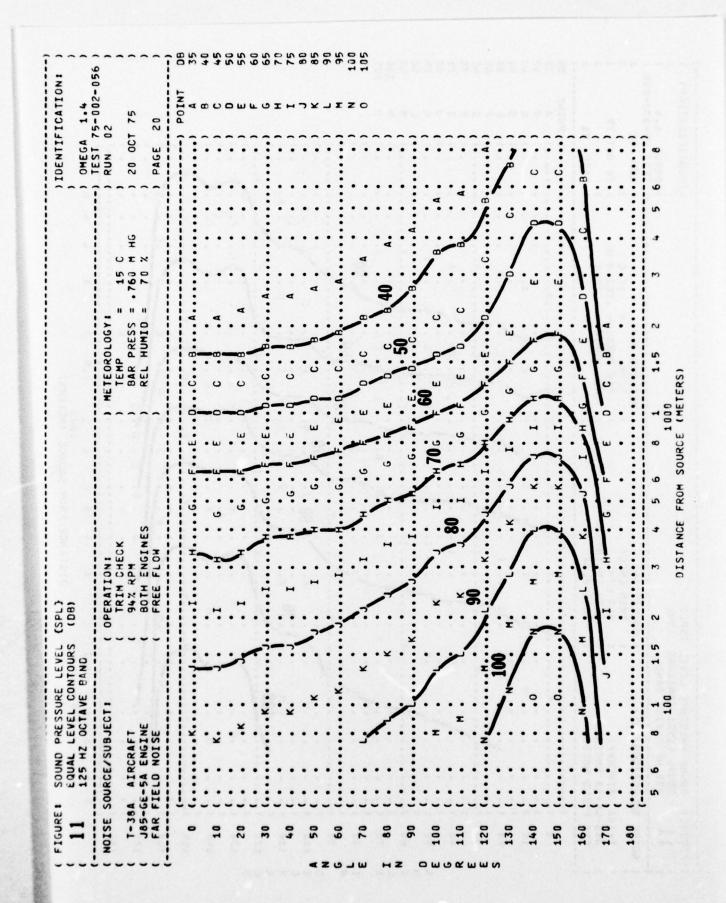


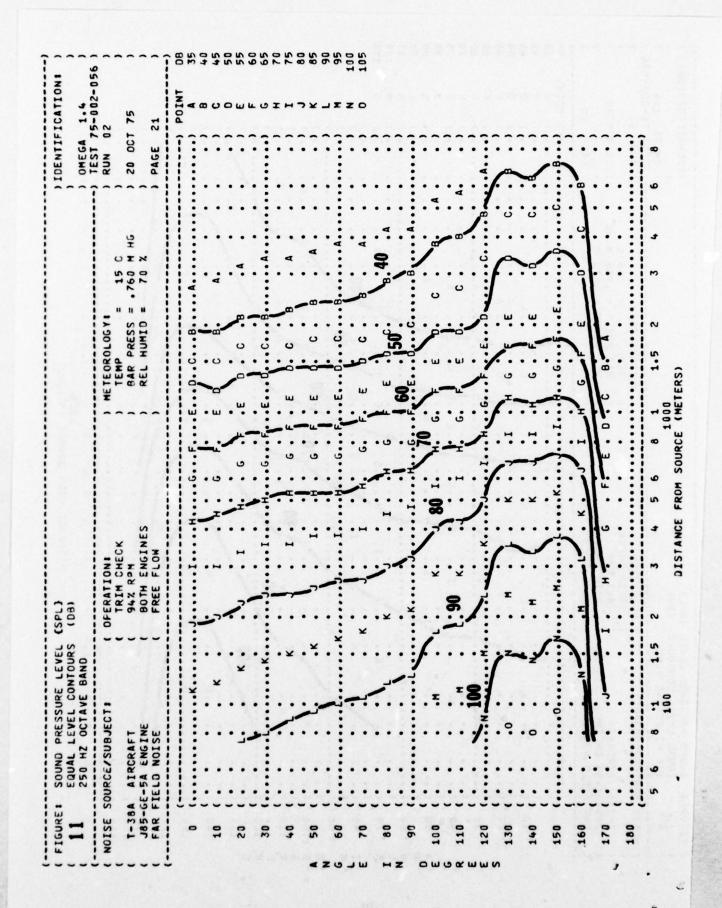


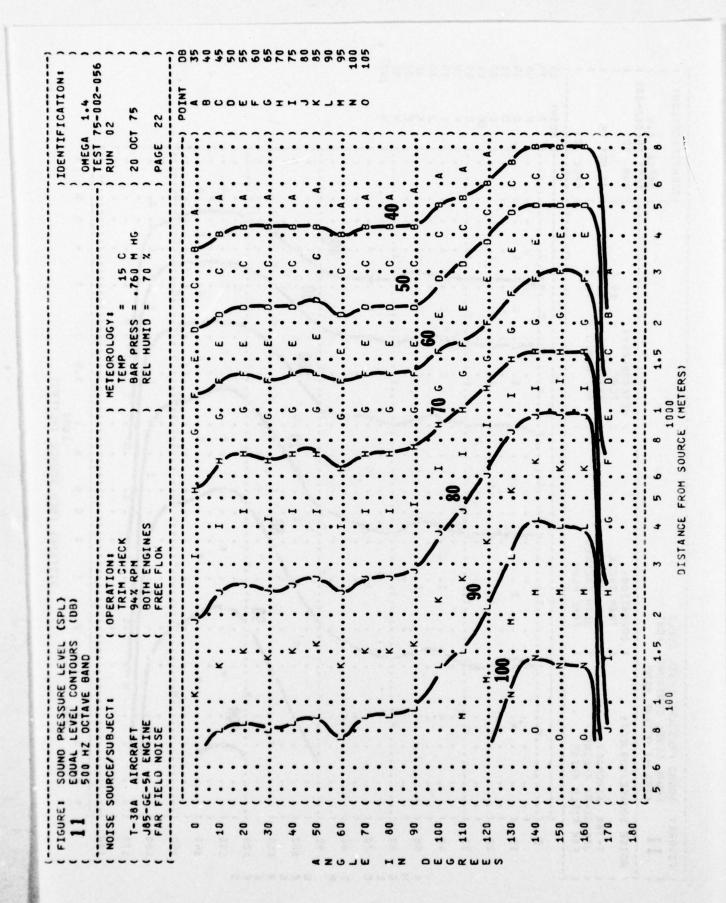
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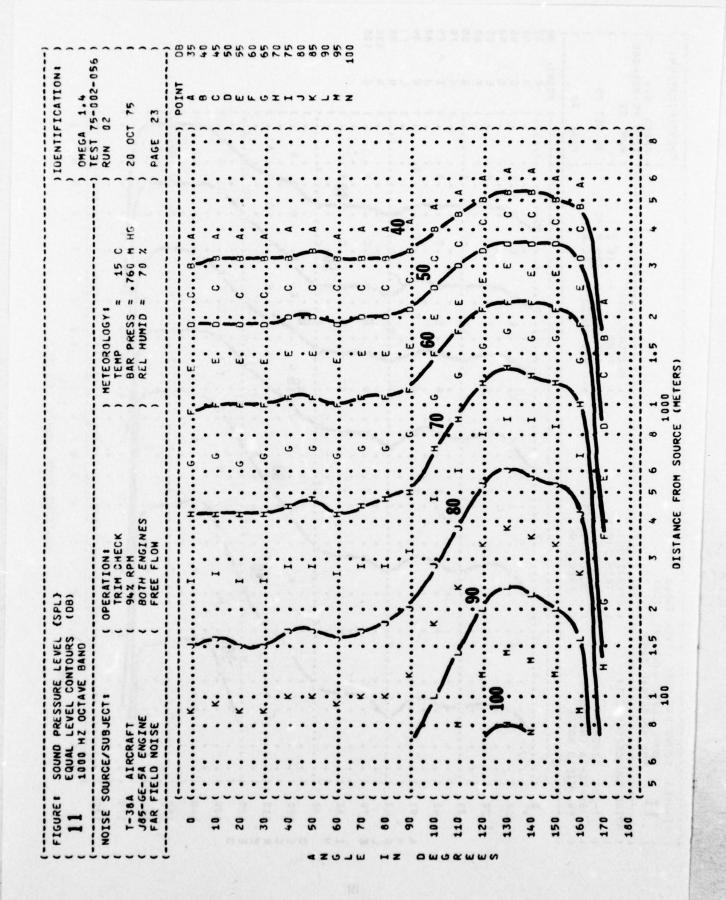


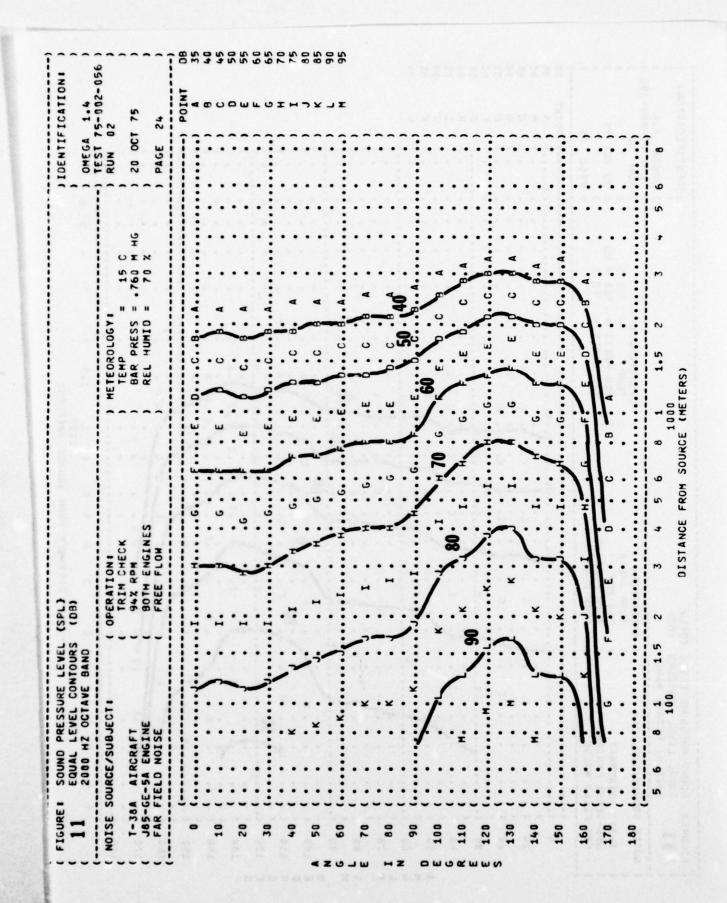


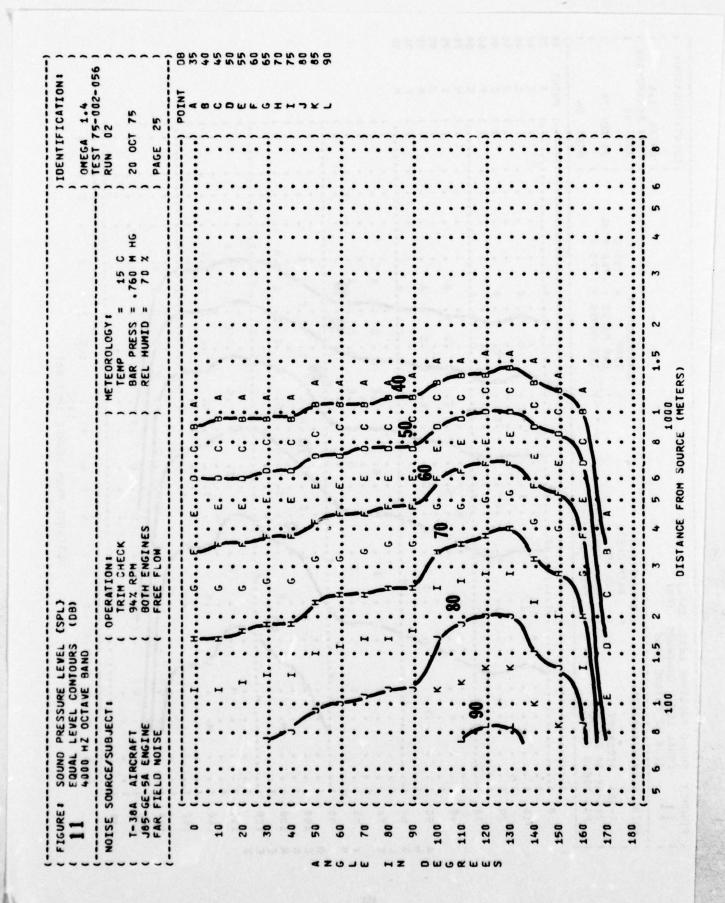


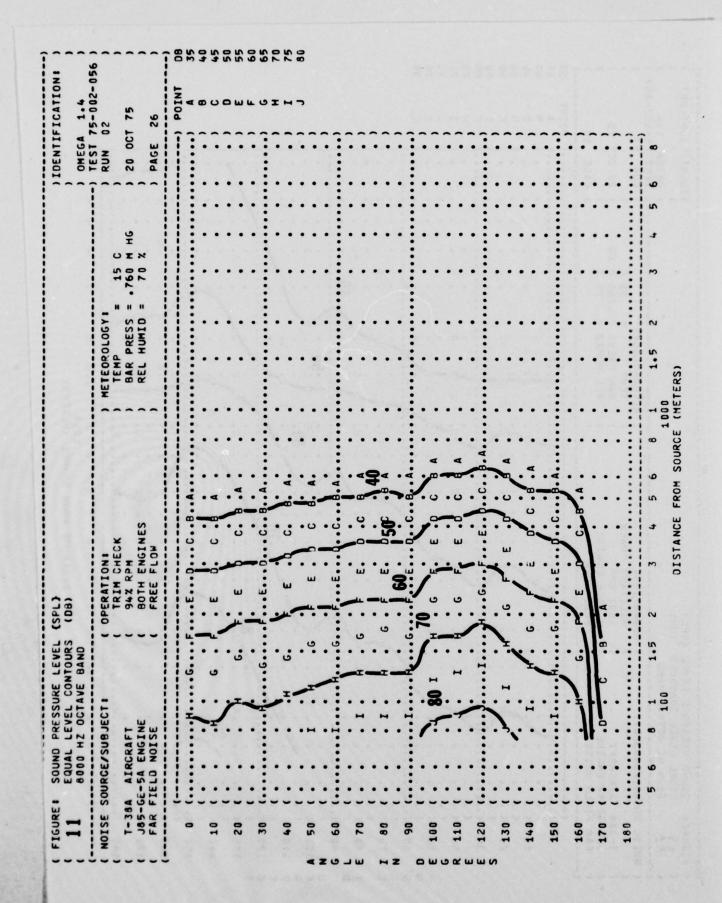


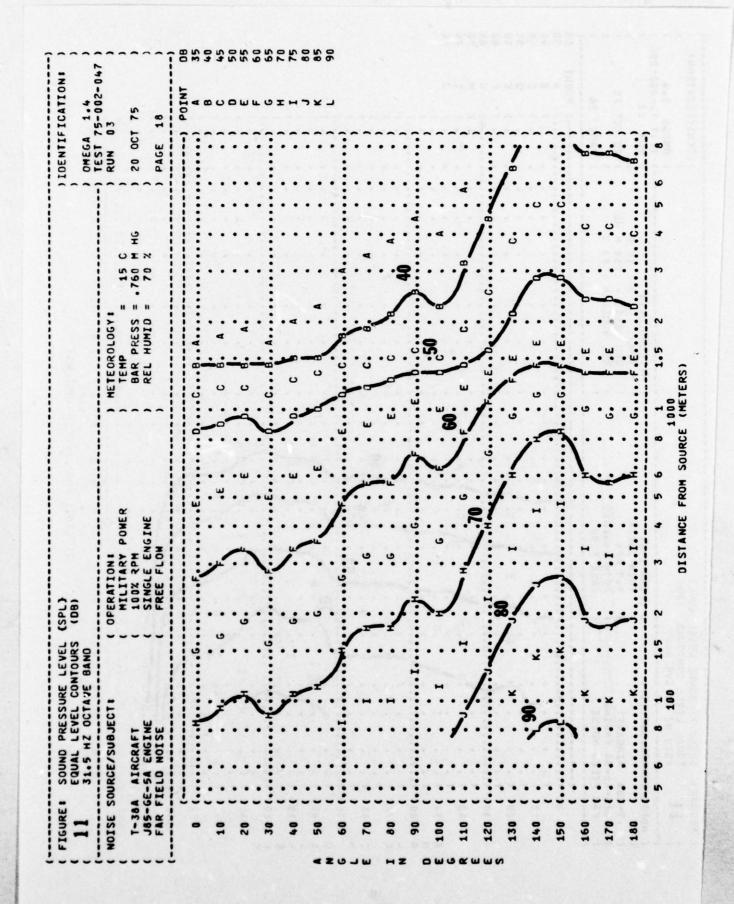


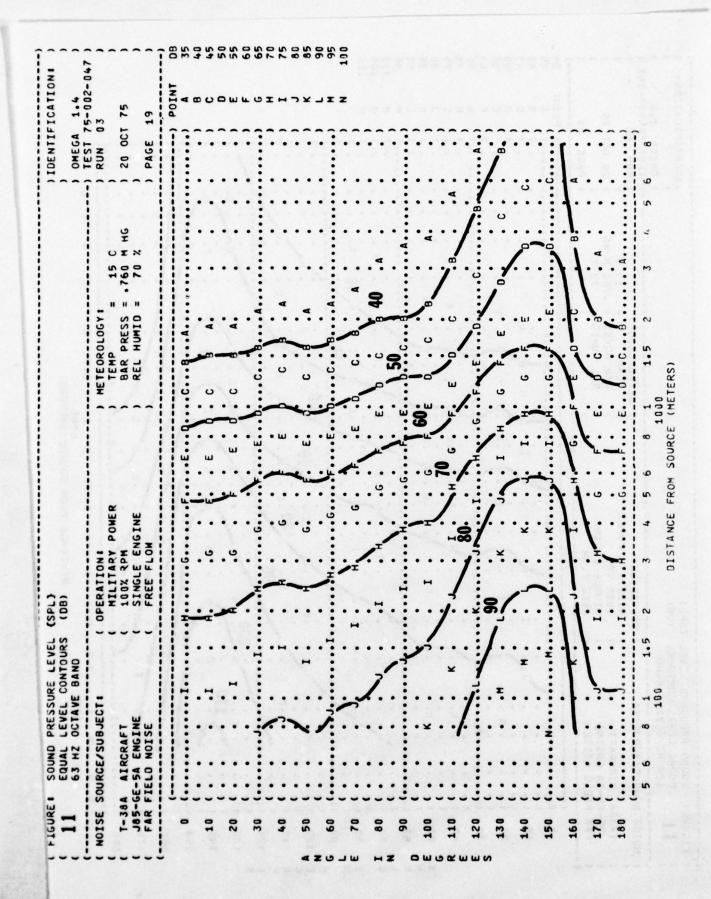


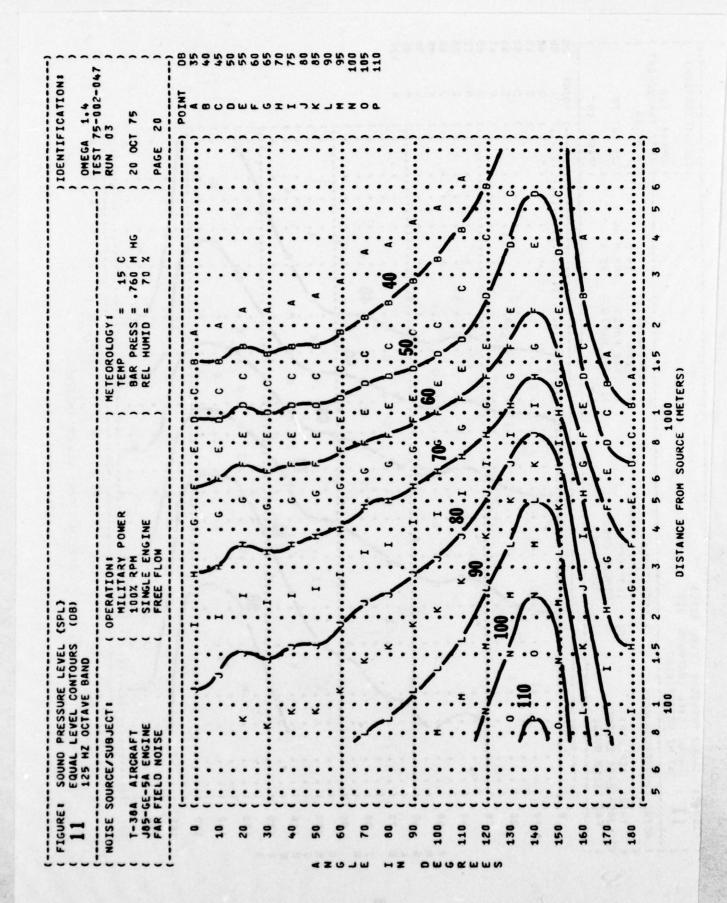


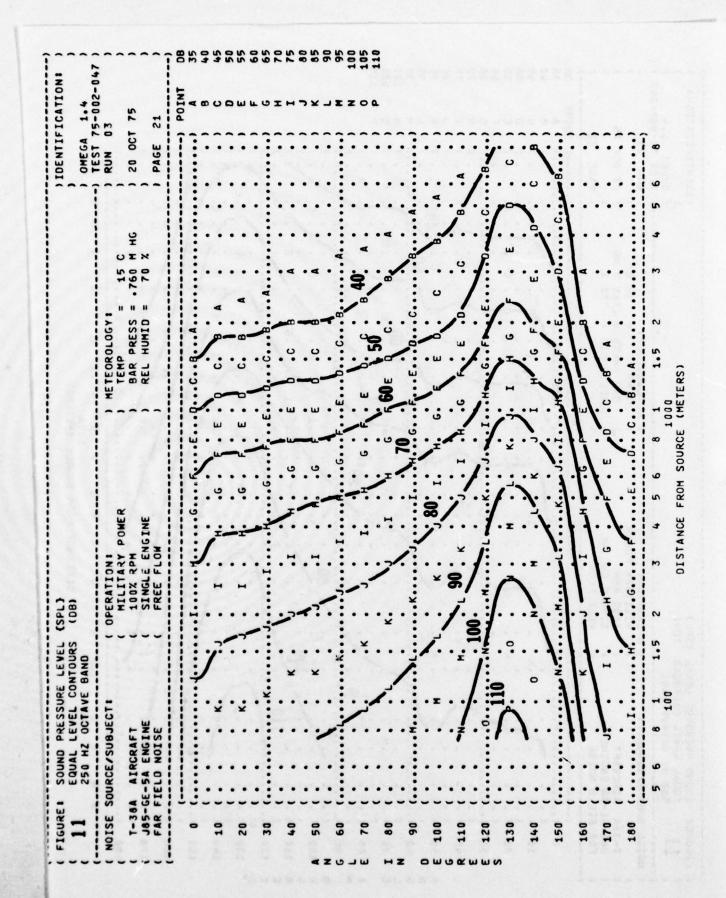


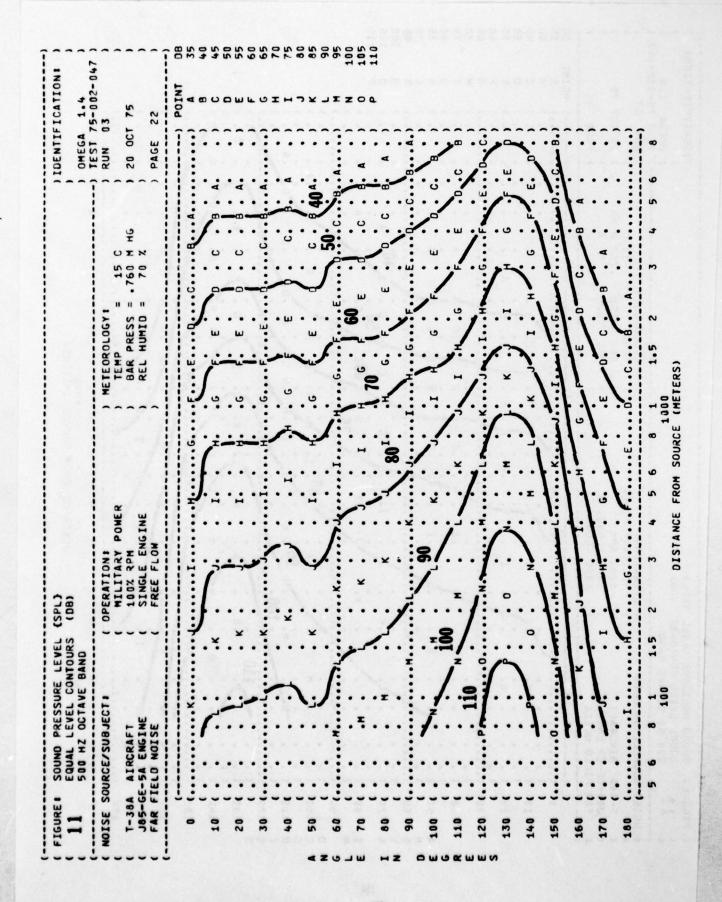


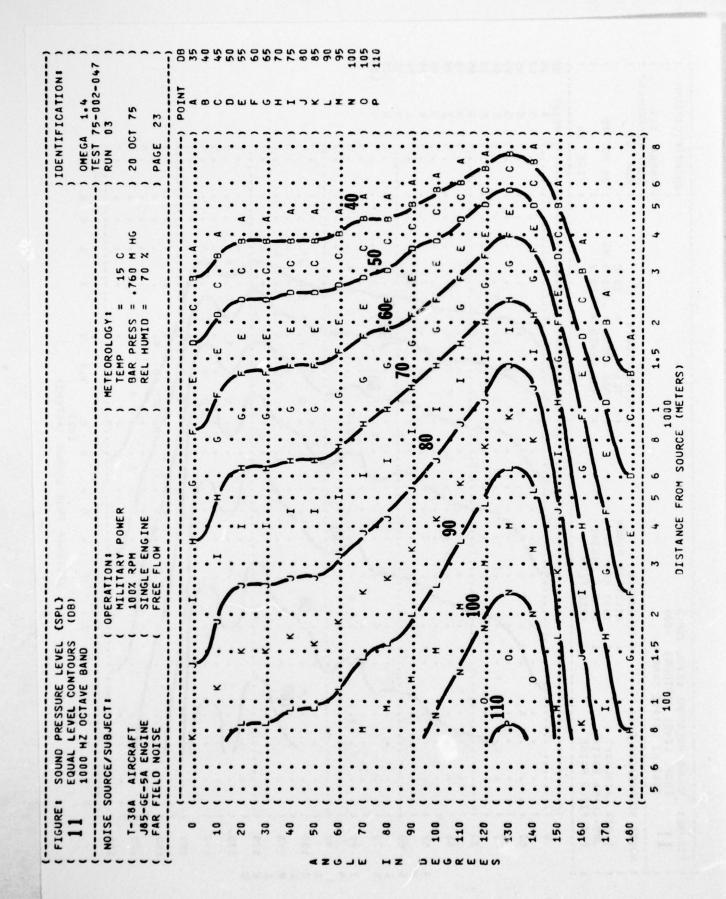


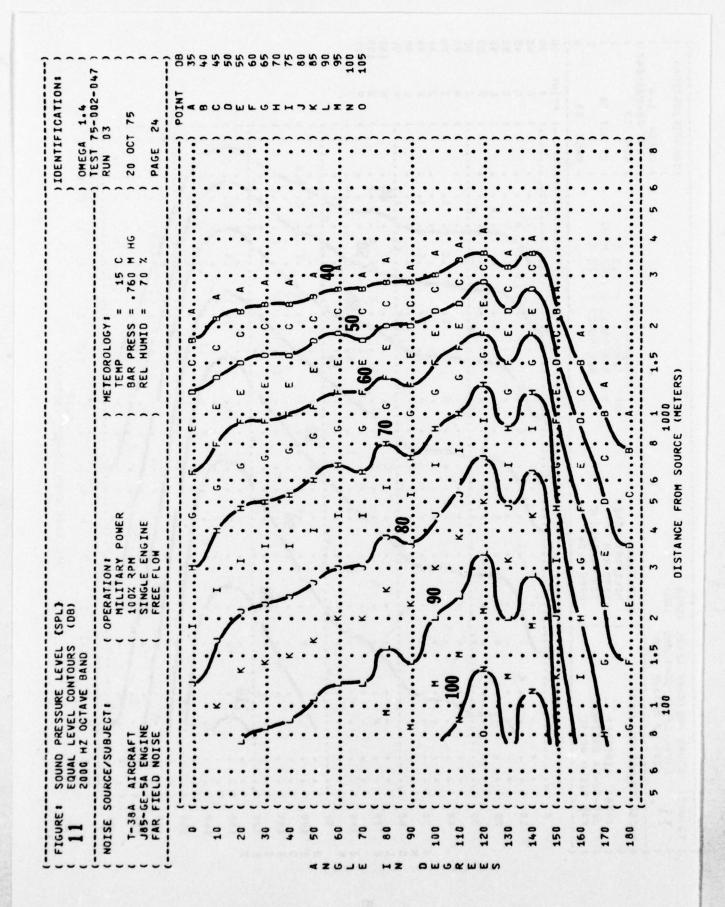


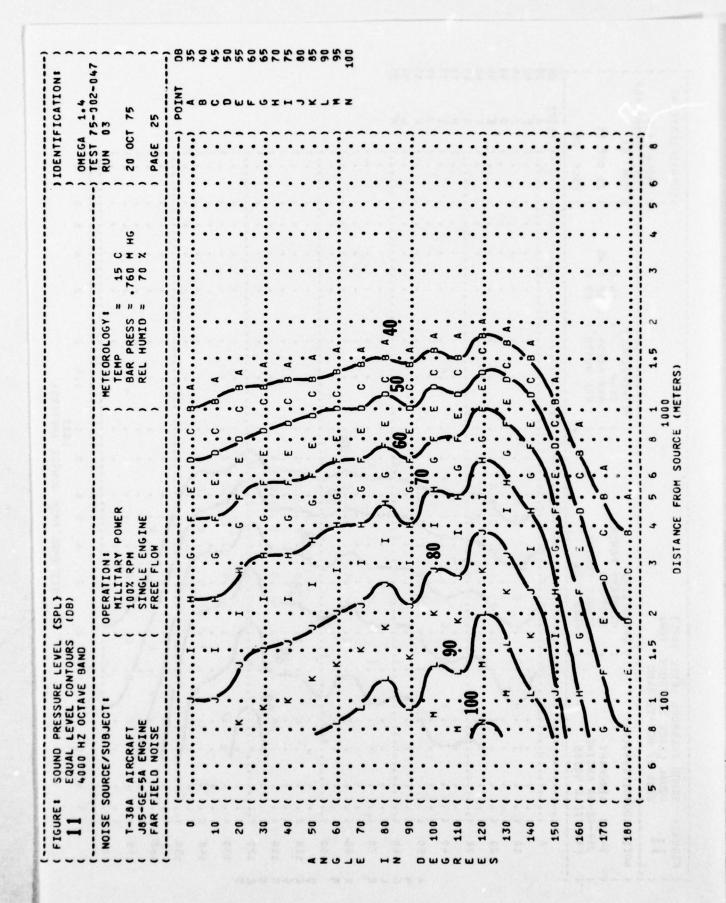


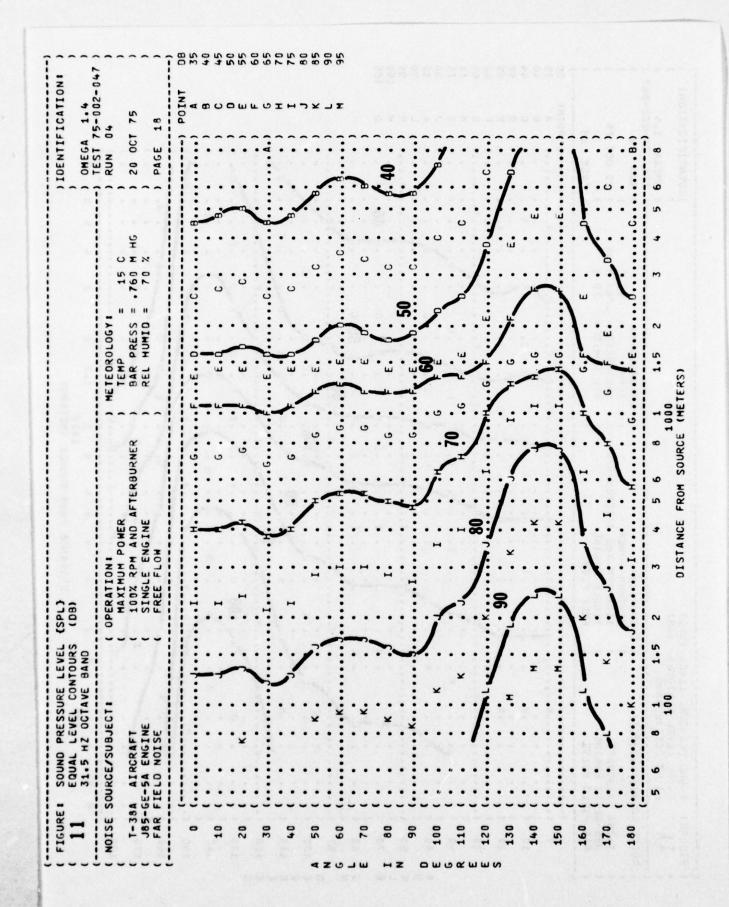


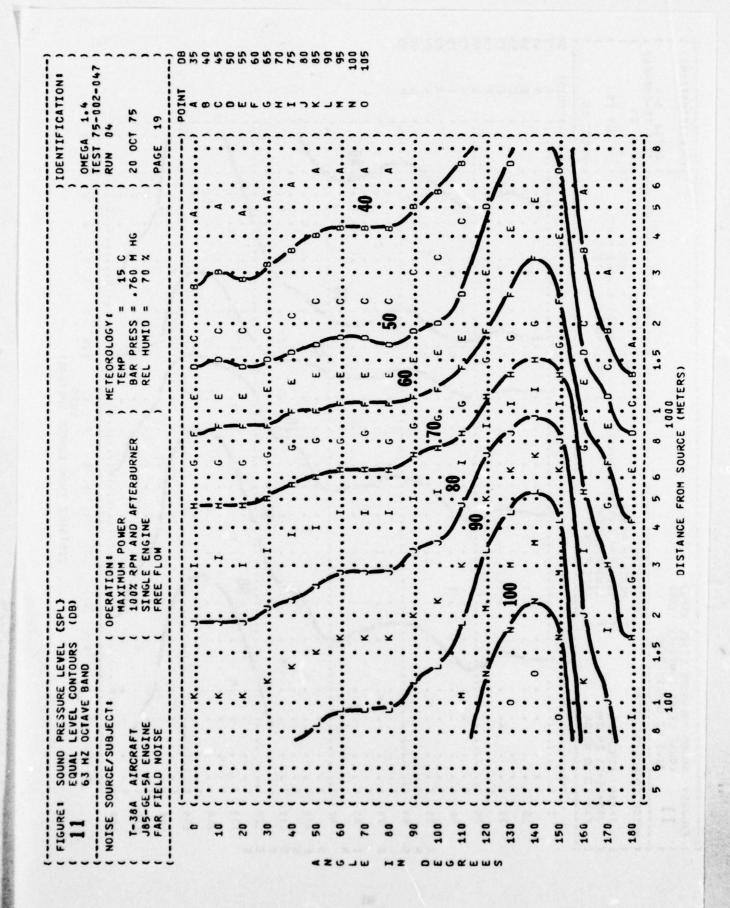


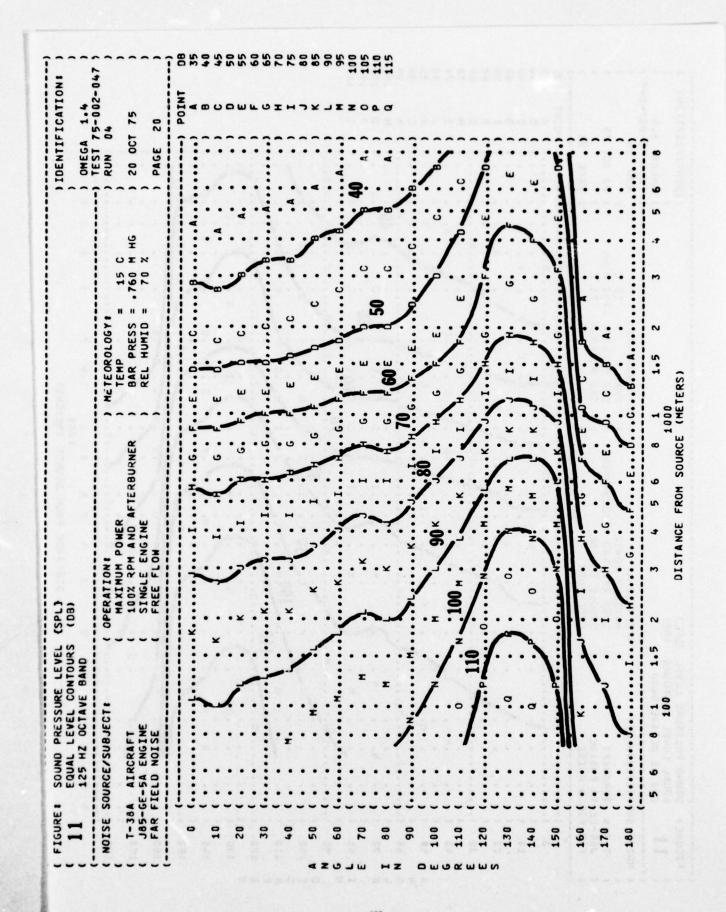


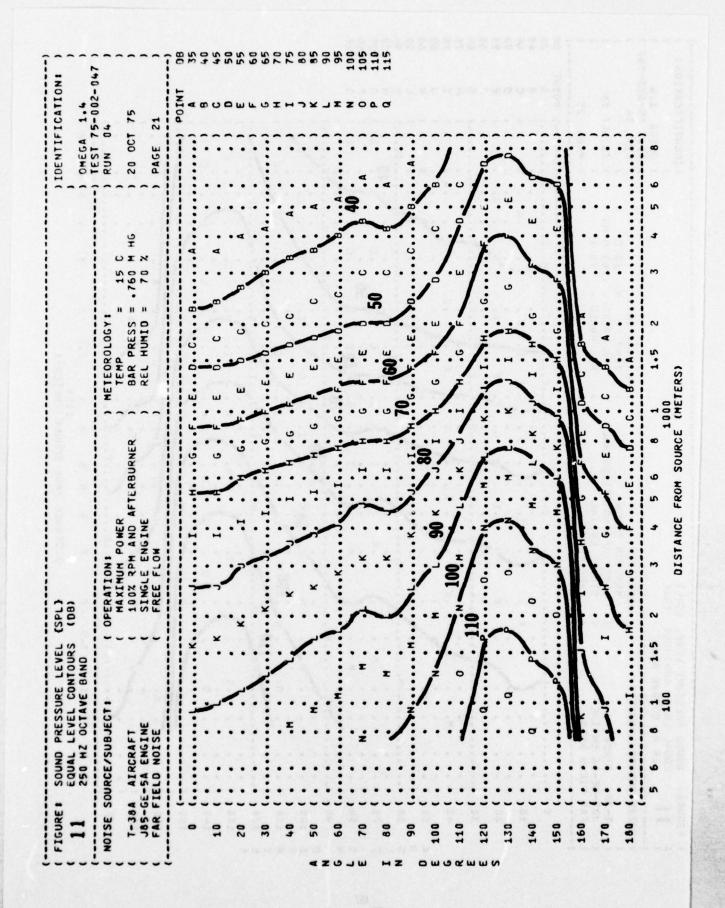


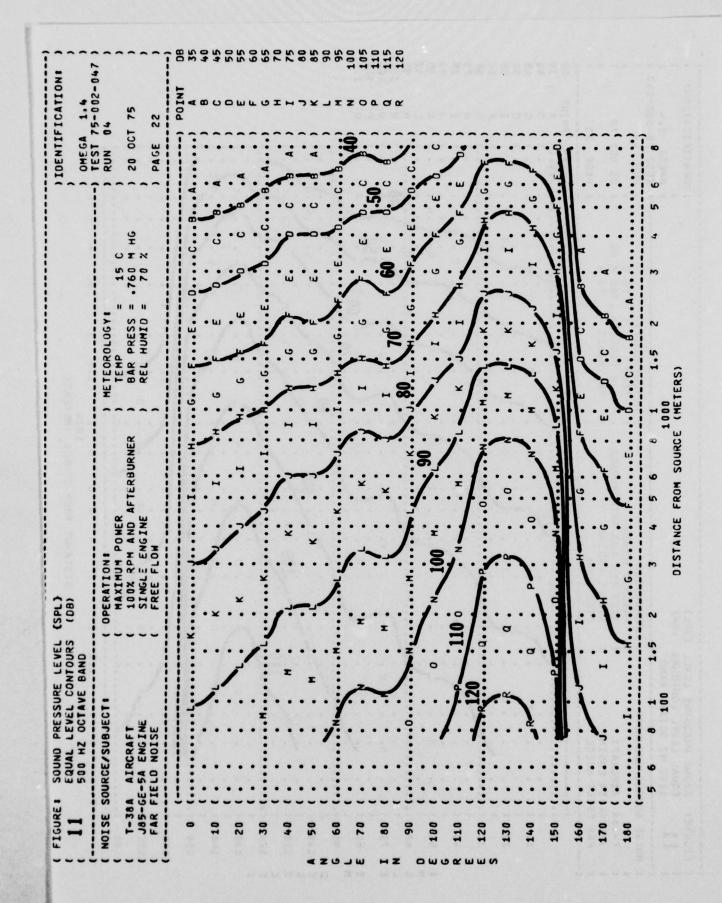


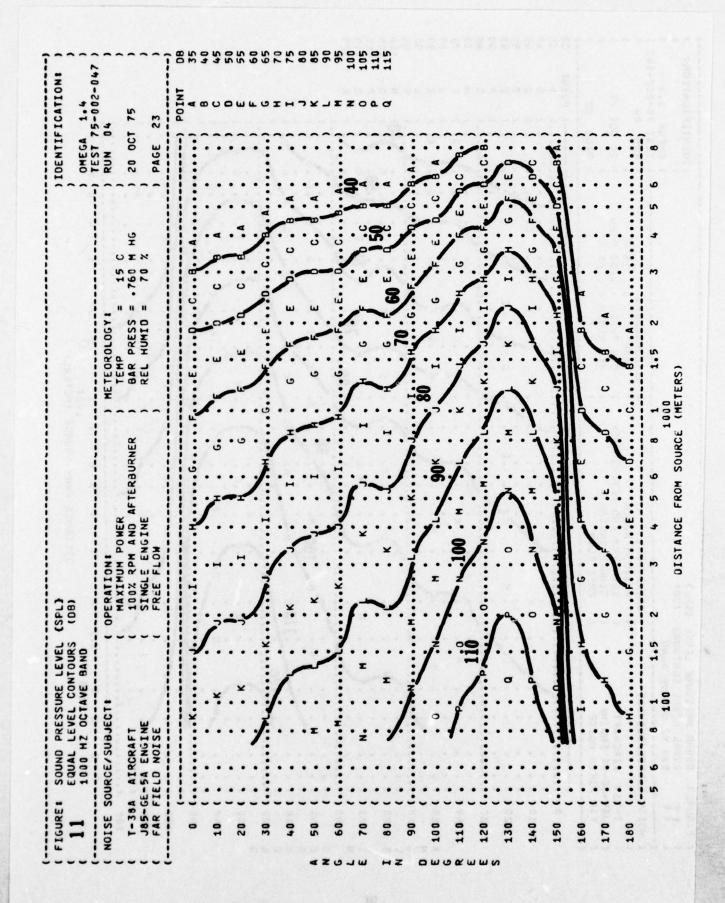


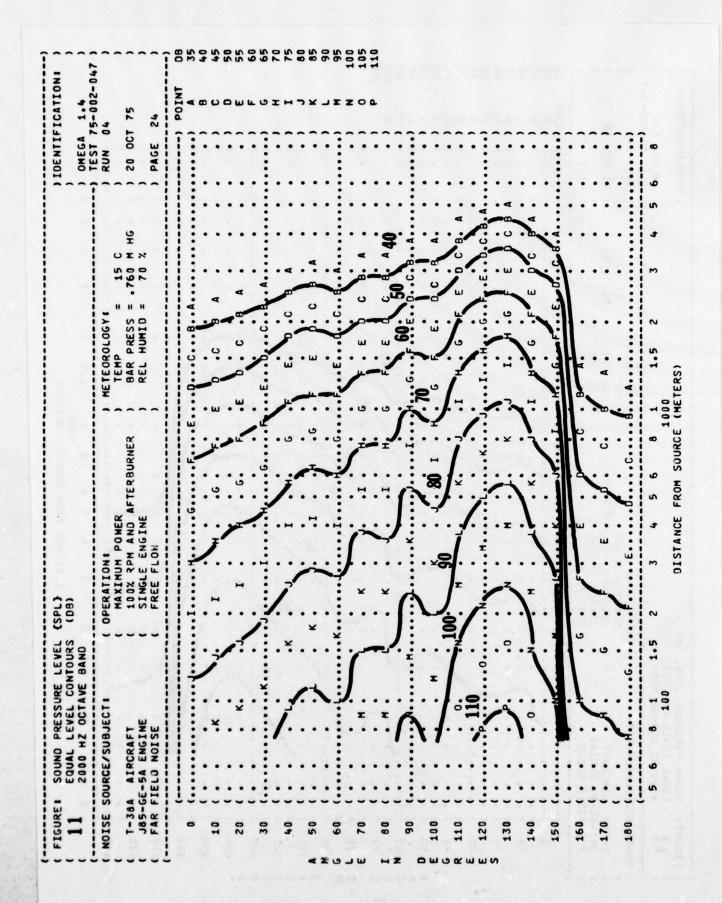


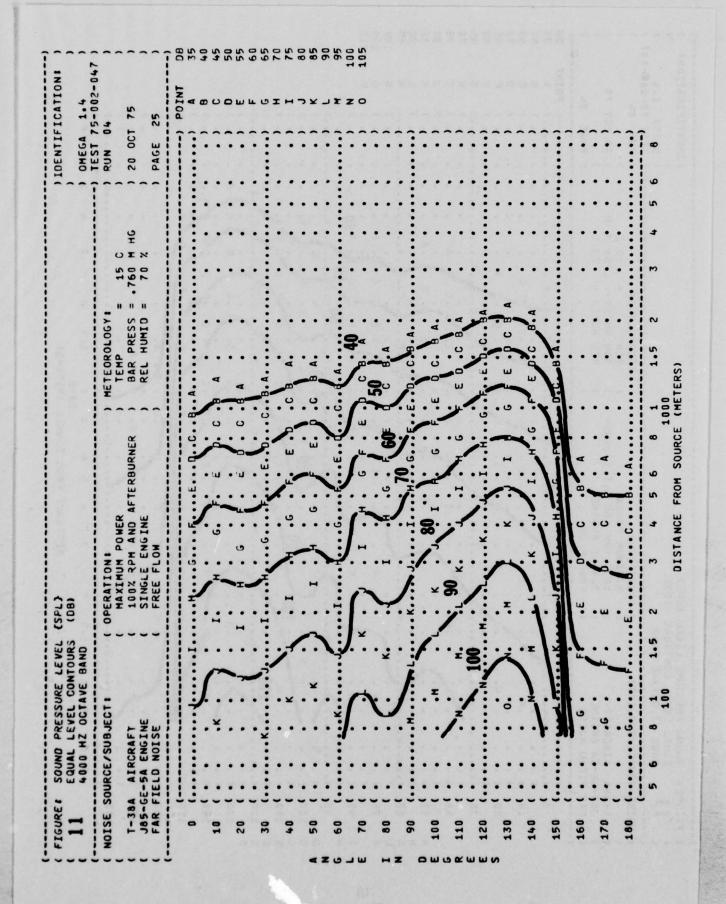


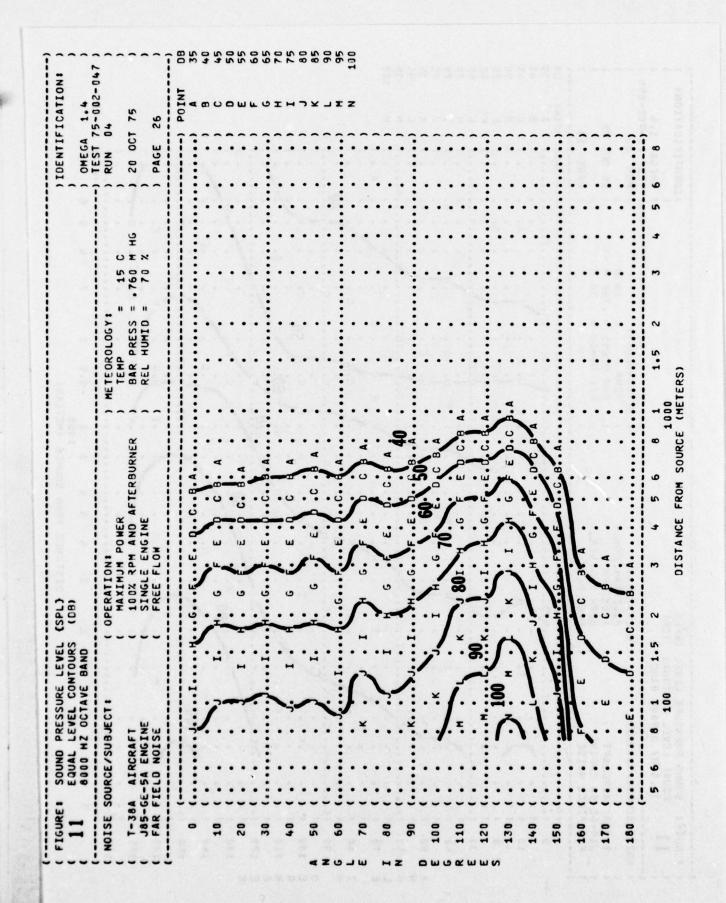


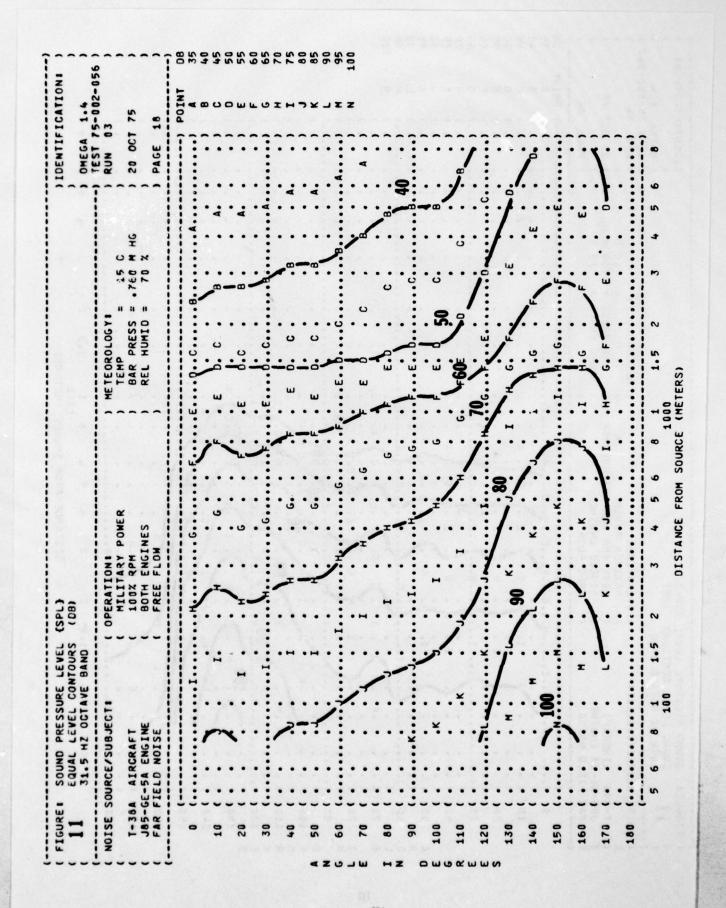


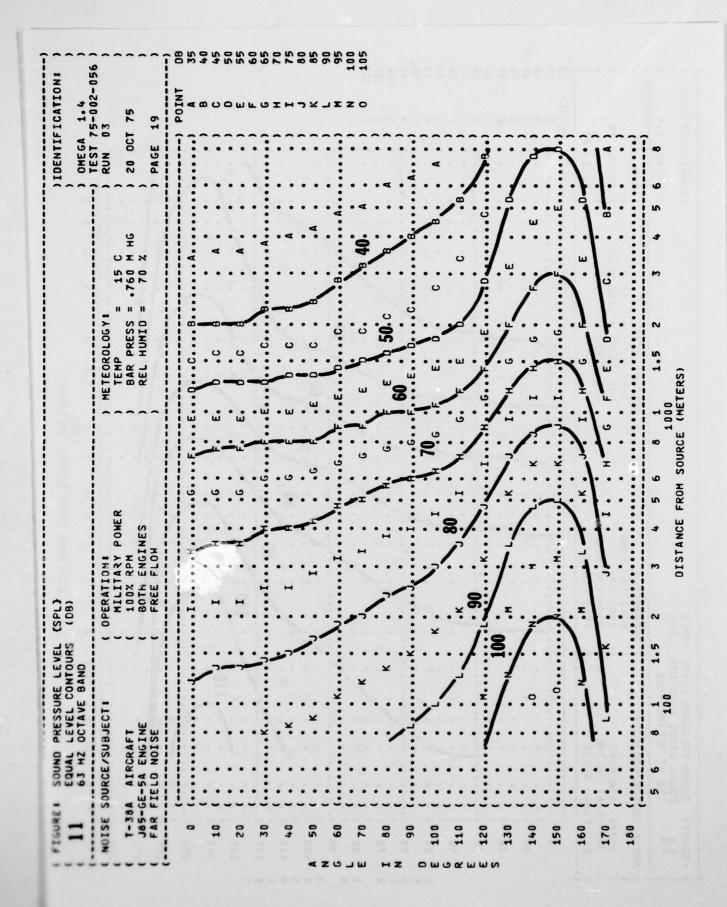


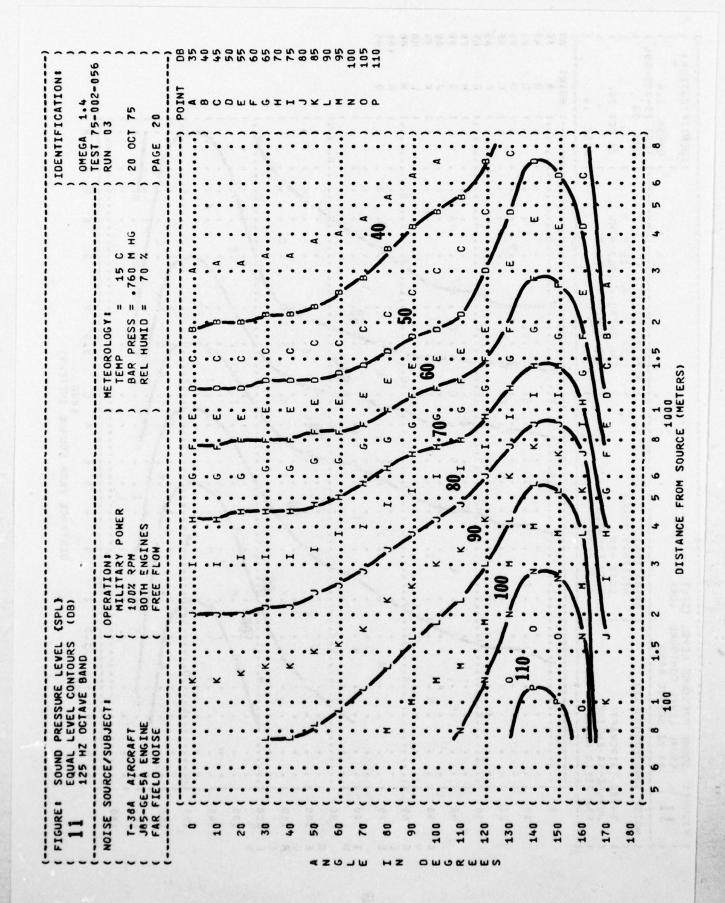


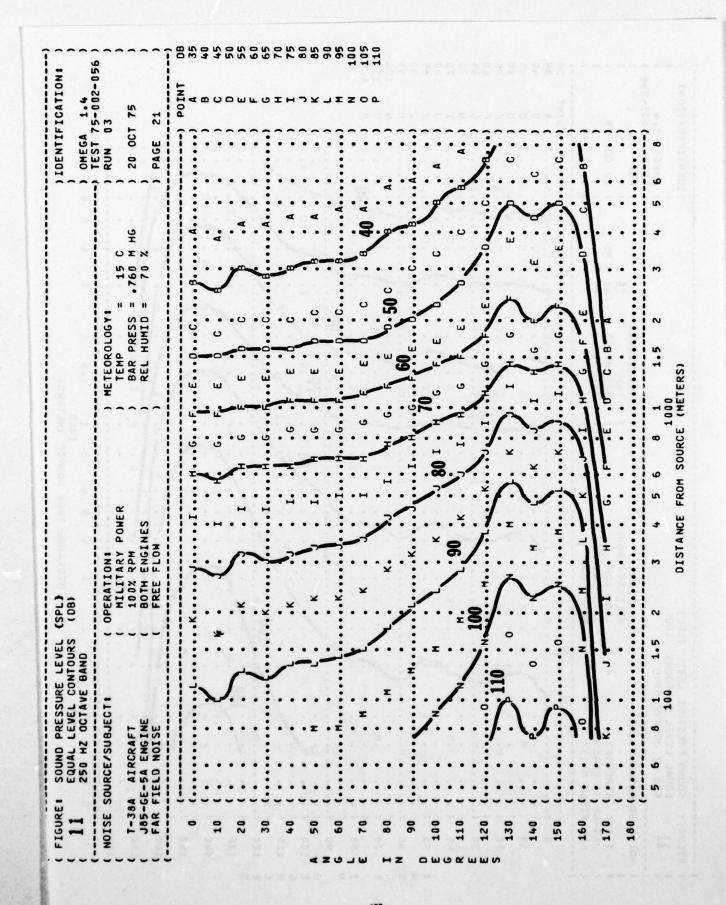


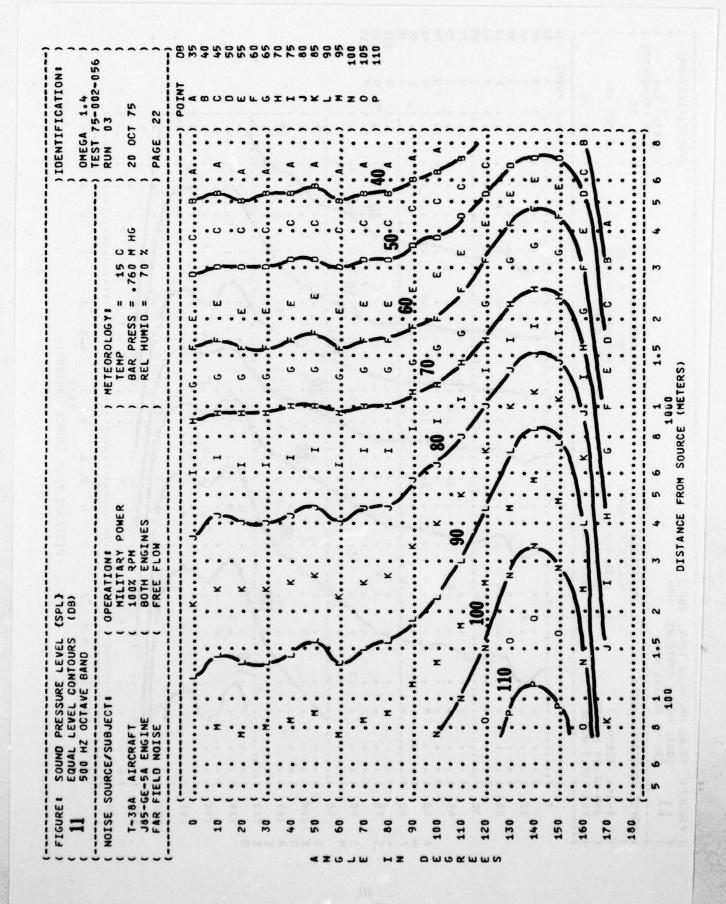


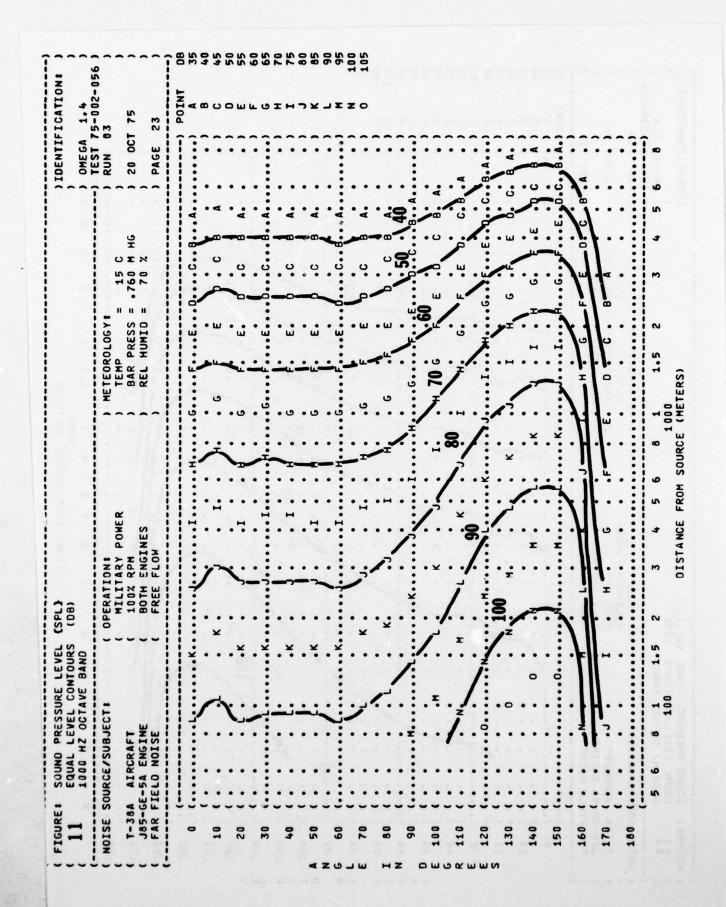


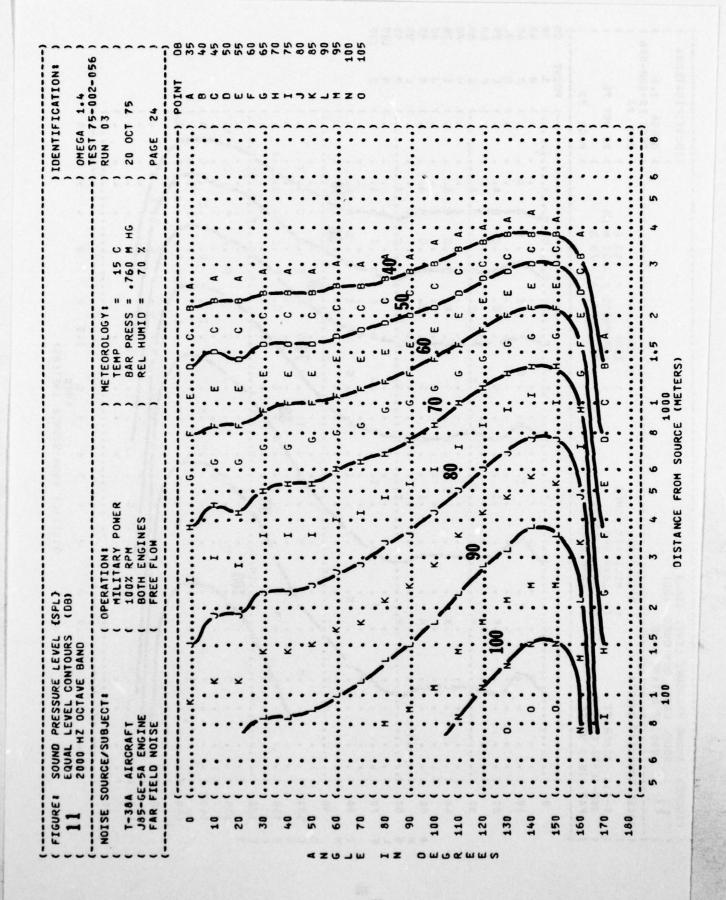


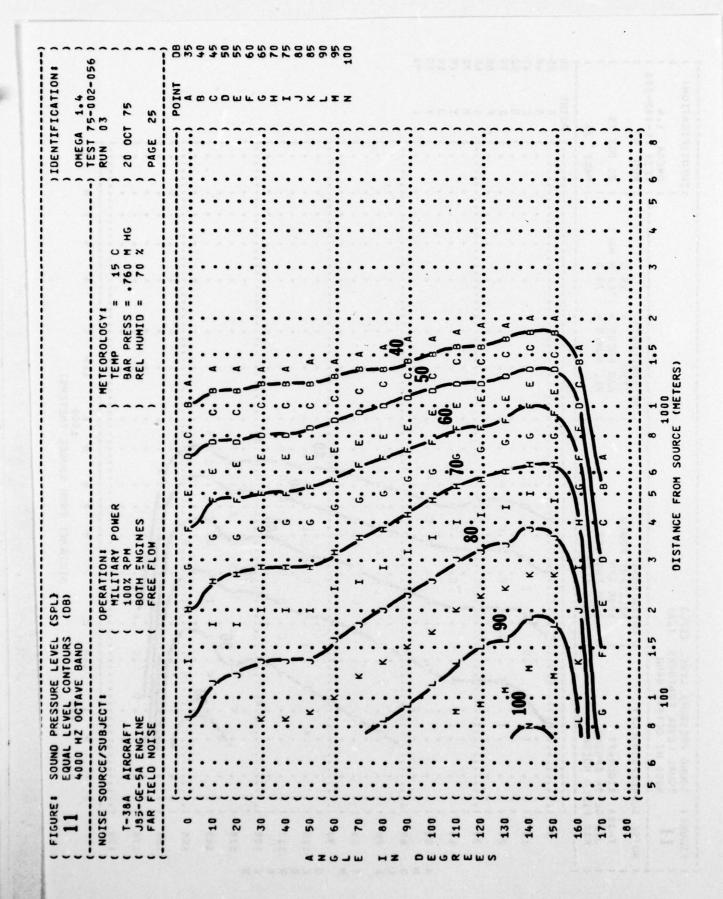


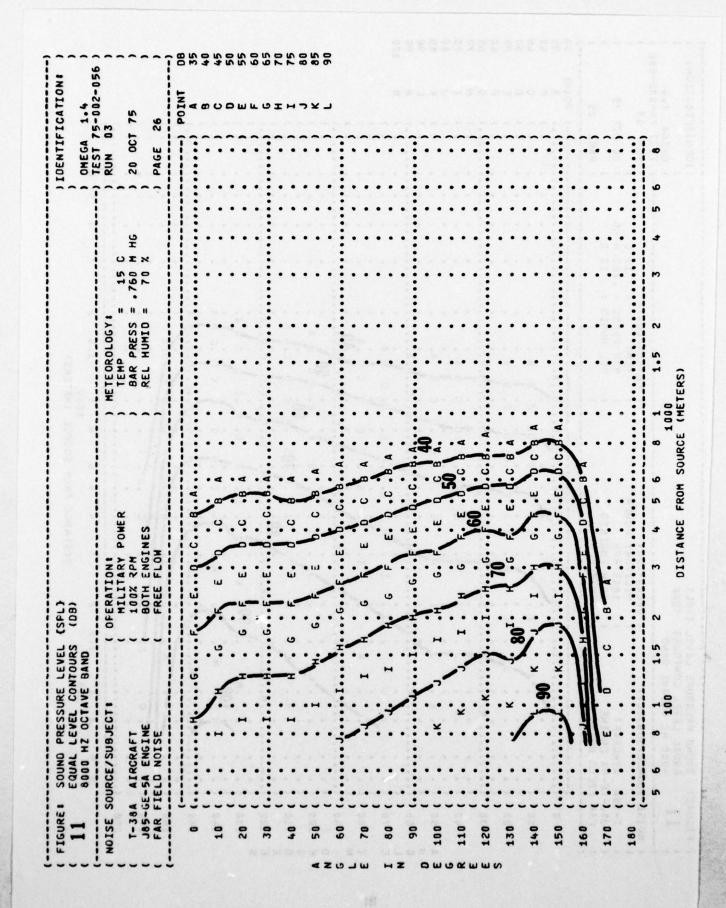


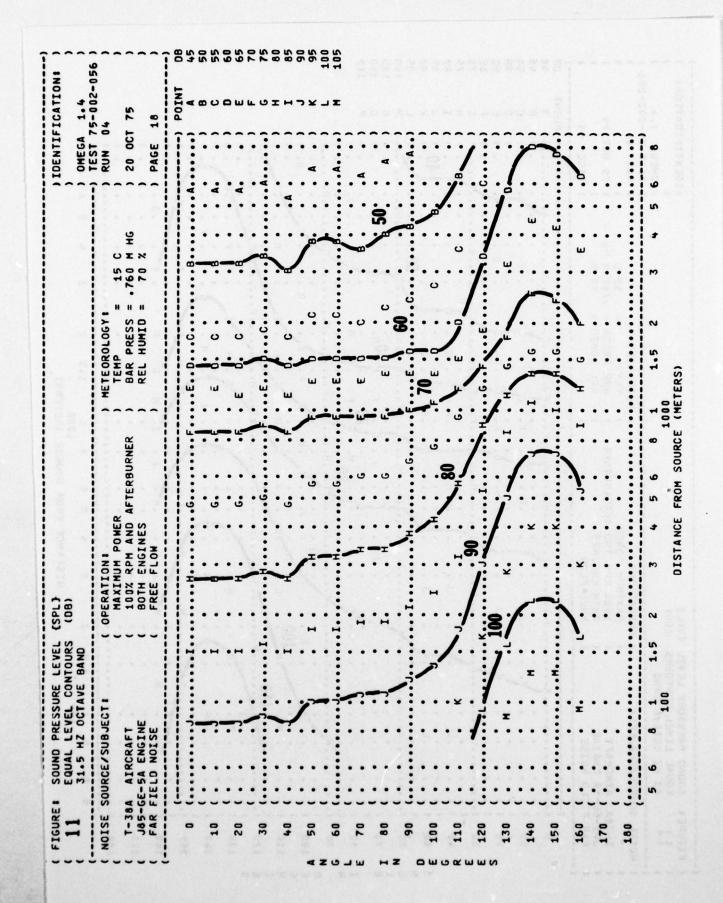


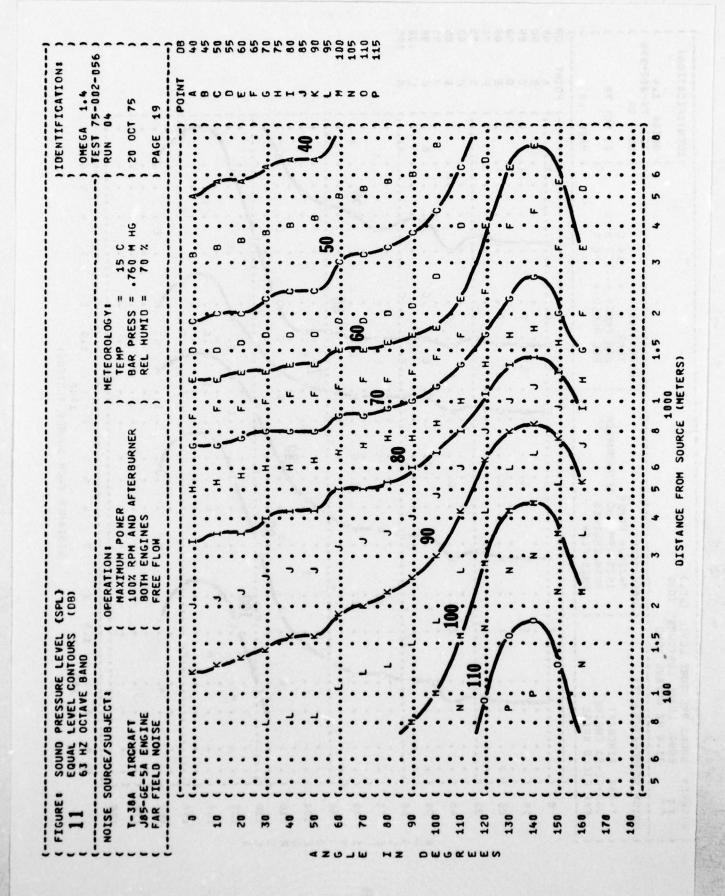


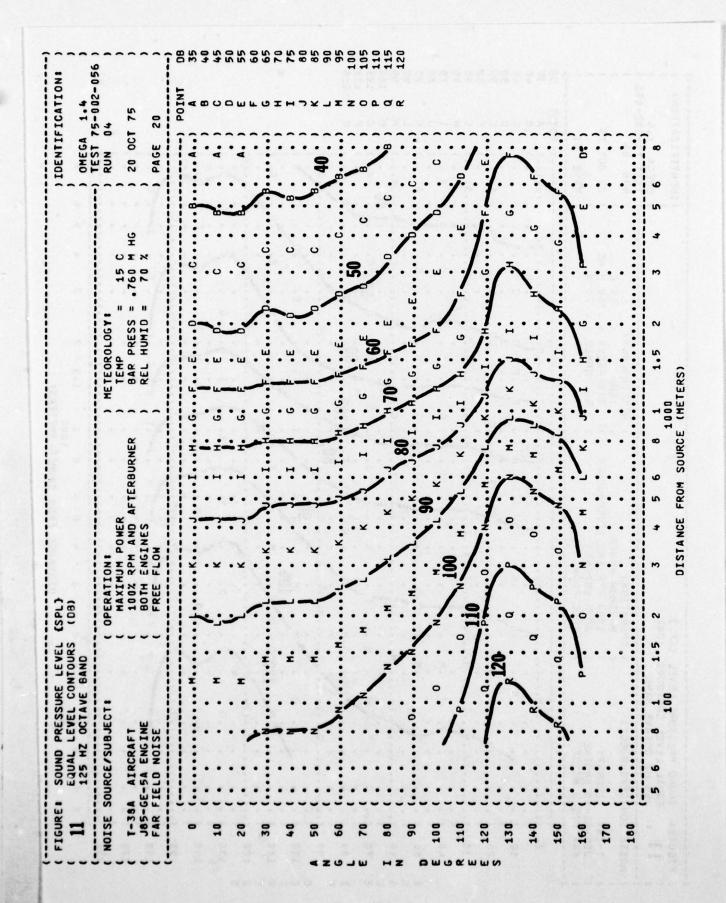


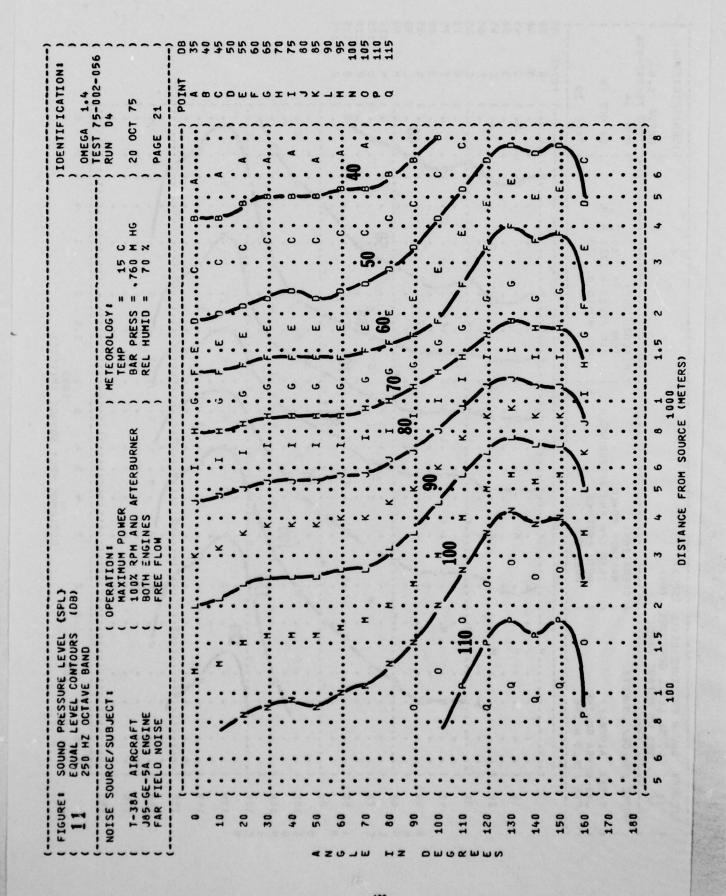


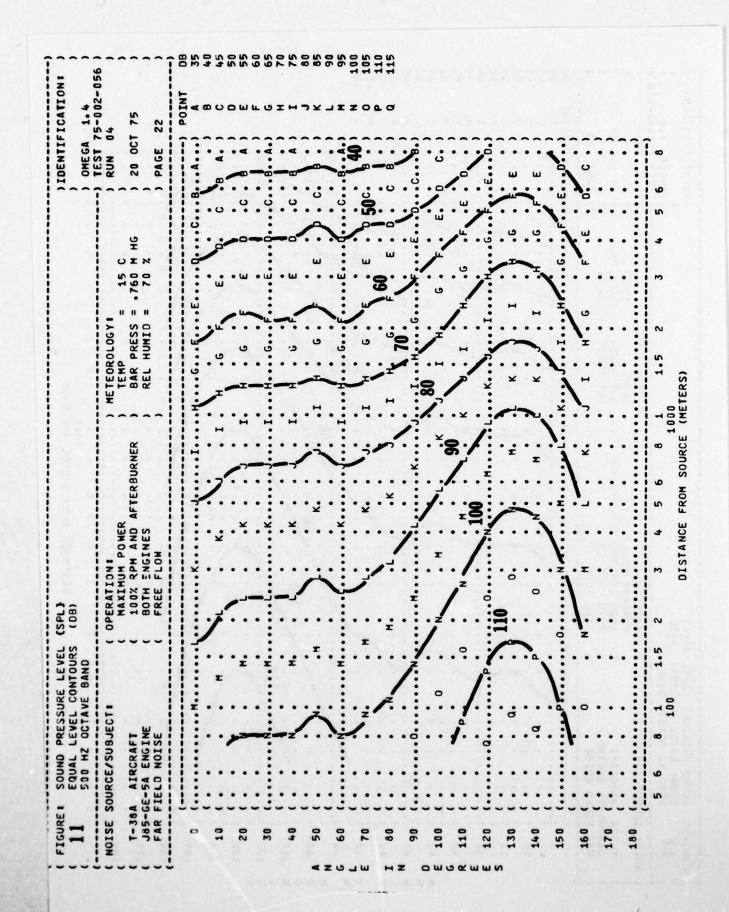


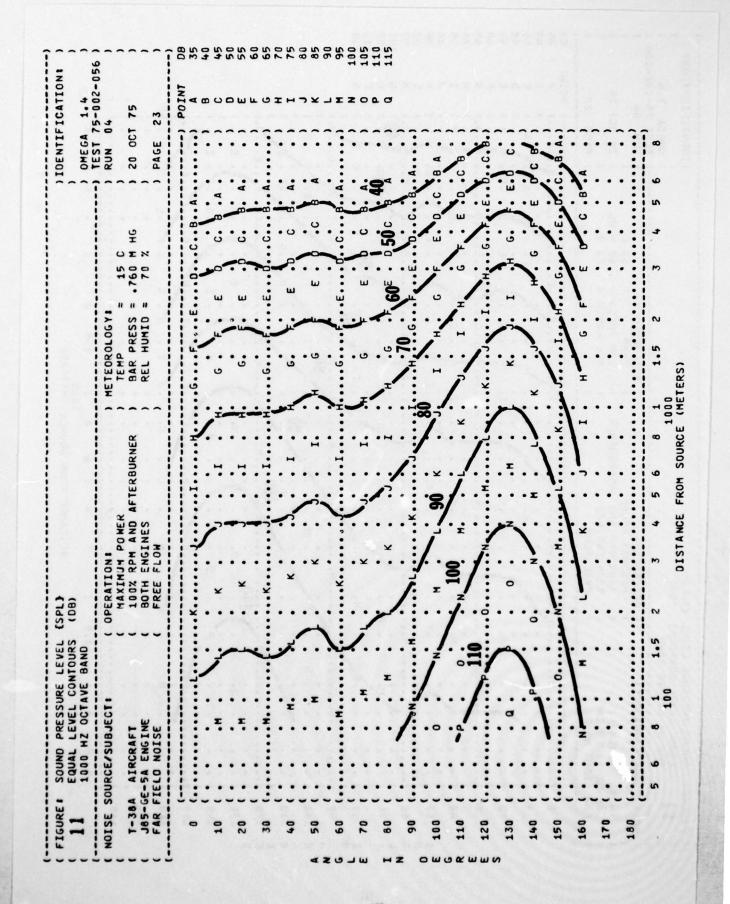












AD-A048 834

AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB OHIO F/6 2U/1 USAF BIOENVIRONMENTAL NOISE DATA HANDBOOK: VOLUME 74. T-38A AIR--ETC(U) FEB 77 R G POWELL AMRL-TR-75-50-VOL-74 NL

UNCLASSIFIED

3 OF 3 AD AO48834







END DATE FILMED 2 - 78

MOTOE COURTESTED	UMEGA 1 TEST 25	1.4
A AIRCRAFT (HAXIM CE-5A ENGINE (BOTH	= 15 C) RUN = .760 H HG) 20 OC = 70 %)	04-006-056 1 75
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FIGURE SOUND PRESSURE LEVEL OF EQUAL LEVEL CONTOURS 1 4000 HZ OCTAVE BAND	L CONTOURS (TAVE BAND	(60)				OMEGA TEST	OMEGA 1.4 TEST 75-002-056
NOISE SOURCE/SUBJECT T-38A AIRCRAFT J85-GE-5A ENGINE FAR FIELD NOISE .		OPERATION: MAXIMUM POMER 100% 2PM AND AF BOTH ENGINES FREE FLOM	AFTERBURNER)	METEOROLOGY: TEMP = BAR PRESS = BAR PRESS = REL HUMID =	15 C .760 M HG 70 %	RUN 20 OC	14 1 75 25
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